

MONTHLY MAIZE EXPORT MOVEMENTS AND  
LIVERPOOL PRICES

by

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South Africa, 1929

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A THESIS

submitted in partial fulfillment of the  
requirements for the degree of

MASTER OF SCIENCE

KANSAS STATE COLLEGE  
OF AGRICULTURE AND APPLIED SCIENCE

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## PREFACE

### Purpose

This study has been made primarily with the purpose of determining the place of South African maize in, and its relation to, international maize trade.

With this end in view, in the first place the seasonal maize export movement from the four principal exporting centers - the Argentine, the United States of America, the European export countries (especially Roumania), and South Africa - has been investigated and analyzed, showing the relative importance of each source of supply during the various seasons of the year. The seasonal movement has, further, been followed according to countries of destination to determine the actual competition experienced by each exporting country.

In the second place, maize prices have been studied in relation to the export movement. For this purpose Liverpool cash prices have been used. Because of the dominant position of Argentine in international maize trade, primarily the Argentine exports and LaPlata maize prices have received consideration, and a number of years analyzed in detail. In discussing price determining factors, the size of crops and general business conditions have been considered in conjunction with the export movements.

An attempt has also been made to study South African maize prices on the Liverpool market. For this purpose the relation between Argentine and South African maize prices has been considered in conjunction with the export movement from these two countries to the United Kingdom, and the last few years analyzed in detail. Further, the South African export movement and prices at Liverpool have been studied in conjunction with the size of this country's production.

#### Sources of Information

Compared with wheat, very little investigational study seems to have been made in the case of maize, so that this study has been retarded by the lack of data, and some of the deficiencies in this work are to be ascribed to the fact that most of the statistical data used in this study did not exist in any available tabular form but had to be compiled, and in addition, in many cases, notably with regard to prices and to European exports during the war period, no records are available.

The chief sources of information have been, as quoted in the text and under "References", the publications of the International Institute of Agriculture, Rome; the publications of the United States Departments of Agriculture and of Commerce; "Broomhall's Corn Trade News", and also infor-



mation supplied by the United States Department of Agriculture.

In this connection the assistance and guidance of Professor R. M. Green is with pleasure acknowledged.

### INTRODUCTION

The principal sources of maize entering international trade are, in order of importance, Argentine, the countries of the Danube Basin (including Roumania, Jugoslavia, Bulgaria and Hungary), the United States of America, and the Union of South Africa, with Argentine far in the lead. The principal importing area is western Europe, including the United Kingdom.

### Argentine<sup>1</sup>

About seven-eighths of the crop is grown in a rather limited zone embracing adjacent areas of the provinces of Buenos Aires, Santa Fe and Cordoba. Planting takes place during September to November, the bulk being seeded in October, and harvesting is done from February to April but mainly in March and early April. The average size crop for the

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1. U.S. Dpt. Com. - "International Trade in Corn."  
 U.S.D.A. - "Foreign News on Wheat", Nov. 7, 1929.

years 1913 to 1930 is approximately 232 million bushels, and the yearly exports average about 142 million bushels, being about 61 per cent of the crop. The grain is a hardy flinty type, small cobs with medium to small kernels, usually yellow. This grain is somewhat richer in protein and fat and lower in moisture content than the American dent varieties.

The inadequacy of storage and credit facilities in the interior has led to a special method of selling grain in Argentine, known as "a fijar precio", that is, "at a price to be fixed" after the delivery of the grain. By this method the farmer disposes of his grain to a storekeeper or middleman who advances from 75 to 80 per cent of the value of the grain on the basis of the market price on the day of the contract, while the farmer agrees that within a period not more than eight months he will sell the grain at the ruling price of the day on which he decides to sell. The storekeepers and middlemen also lack storage and sell in a similar manner to the brokers or exporters, so that the grain almost immediately after harvest comes under control of the exporter.

The exporting of grain from Argentine is concentrated in a few large firms, and about five of these firms handle from 80 to 90 per cent of all the cereal grain exported. The system of selling at a price to be fixed is also being

used between the Argentine exporter and the buyer in Europe, whereby the European buyer advances 75 to 80 per cent of the value upon receipt of the grain with the privilege of naming the day, within a specified limit, upon which he wishes to buy the grain and in addition the contract provides that the purchaser cannot liquidate more than a fixed sum on any one day. The Argentine seller may protect himself by hedging on the Buenos Aires market.

Because of the long voyage of about thirty days from Argentine to Europe and the consequent possibility of big market fluctuations during that period, a large amount of grain is shipped "on order." This method also enables the exporter to place the grain afloat unsold whenever he is pressed for storage space.

#### United States of America<sup>2</sup>

The bulk of the crop is grown in eleven states stretching from Ohio to the Missouri River and beyond, producing nearly 70 per cent of the entire crop, while the six largest producers here, known as the "Corn Belt" produce about 50 per cent. The bulk of the acreage is planted in May and harvested in October to November. For the years 1913 to



1930 the size of the crop averages 2,750 million bushels, of which approximately 42 million bushels, or only one and one-half per cent of the production, are exported annually.

The common practice of exporters is to sell by grade and the grain is inspected by a federal inspector. The classes exported in largest quantities are "mixed" and yellow, little white maize going abroad. For the last few years about 73 per cent of the exports grade No. 2 and 15 per cent No. 3.

The grain trade is highly organized and in general exporters, brokers, commission agents, speculators and country elevator buyers, etc., are clearly differentiated. The various buyers and sellers who handle export grain therefore have the speculative machinery with which to hedge their risks.

### Roumania<sup>3</sup>

At the close of the World War, Bessarabia, Bukovina and a large section of former Hungary were added to old Roumania, doubling its size, so that a consideration of Roumania's export trade has to bear this in mind. These changes of boundaries also brought the problem of organizing the newly

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3. U.S. Dpt. Com. - "International Trade in Corn."  
 U.S.D.A. - "Agricultural Survey of Europe."

formed kingdom; the transportation facilities, never adequate, were acutely lacking after the war; and above all, sweeping land reforms were made after the war whereby millions of acres formerly operated as large estates passed into the hands of peasant farmers.

Whereas in pre-war years Roumania had been an important exporter of maize, during the war this was totally suspended and in the first half of 1919 600,000 bushels were imported, while of the crop harvested in that year, exports were allowed only under permit. Since then, exports have gradually increased again, but production and exports are appreciably lower still than under the old system due to the low acre yields obtained by the inefficient methods of the peasants.

In pre-war years most of Roumania's maize was grown by the peasant renting a small plot of land from the large estate owner, the latter growing little maize himself. In many cases, some of the crop was harvested in an immature state, because the estate owners sowed winter wheat on the maize land. In post-war years the peasants grow maize on their small holdings and agriculture in general lacks the method and foresight of that of the old estate owners. Planting is done during March and April and harvesting during September to October, but because of the lack of foresight and work animals, planting is often rushed in too soon

or too late, and the harvesting is done just to meet the peasant's needs and may be discontinued many times, especially in winter, because of the numerous holidays.

For the years 1919 to 1930 the crop has averaged about 160 million bushels, and of this about 27 million bushels are annually exported, or 17 per cent of the production. These exports follow two routes mainly: the maize from northwest Roumania goes towards Austria, while the rest follows the transportation system to the Danube River and thence through the Black Sea to western Europe.

The peasant sells his small parcel to buyers in the local towns. As a result of this system the grain is of a varied type and often inferior in quality, but the bulk is a yellow flint. The small buyers sell to agents of some large firm. These firms have to do their own cleaning, grading, etc. In the ports of the Danube are established export houses, with connections in western Europe, who ship grain on sample. The total absence of country elevators and the lack of sufficient freight cars results in not all the crop being able to be exported before the river freezes.

### South Africa<sup>4</sup>

While some maize is produced in every district in the country, the important maize producing area, known as the "maize triangle", is concentrated on the highveld and middleveld of the southern Transvaal and northern and eastern Orange Free State. Planting is done in October and November, and harvesting takes place from May to July. For the years 1913 to 1930 the average crop is 52 million bushels, or for the latter years about 66 million bushels, with an average annual export of about 10 to 14 million bushels or 20 to 25 per cent of the crop.

Country elevators are established at the principal dispatching stations in the grain belts and large terminal elevators at the ports. The elevators are controlled and operated by the South African Railways and Harbours Administration (that is government owned and controlled) and the functions of the elevator system are confined to grading, weighing, cleaning, storing and handling the grain, and issuing transferable elevator receipts to owners, no buying or selling being done by the elevators. The grain is graded

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4. U.S. Dpt. of Com. - "International Trade in Corn." Official Yearbook of the Union of South Africa, No. 11, 1928-29.  
Frankel, H. - "Cooperation and Competition in the Marketing of Maize in South Africa."



according to government regulations. On the average about 37 per cent of the exports grade as No. 2 (flat white) and 35 as No. 6 (round yellow).

The maize, after leaving the farmer for the export trade, is generally handled in one of three ways: by the local storekeeper; directly, or through a broker, by a wholesale merchant; or by the cooperative maize selling associations. The present relative importance of each is not known, but it seems that some maize is handled by each method, and the continuance of the first method is much to be deprecated. The actual exporting of maize is done by wholesale merchants, as the cooperatives have not as yet undertaken the work of export themselves. In the case of the wholesale trade, a certain amount of differentiation of function has developed, some firms carrying on local business, others concentrate on export, but this differentiation is not marked. In addition certain large overseas grain firms interest themselves in the export trade. As yet, there is no organized grain trade, but there is a good deal of making of contracts for forward delivery and this suggests trading which is of the same nature as the "futures" trading on an organized exchange.



## PART I

## THE SEASONAL EXPORT MOVEMENT

## The General Movement

The Pre-War Years. (See Fig. 1).

## (a) Heavy exports.

The Argentine exports after the harvest<sup>5</sup> in March and April increase from March to a peak in October, the period of heavy exports being June to October.

The United States of America exports after the harvest in October increase from November to a peak in March, with the heaviest exports during February to April.

The Roumanian exports, after harvesting in October, rise from November to a peak in May, with the heaviest exports during March to July.

The South African exports after the harvest during May to July increase from July gradually to a peak in December, but exports retain a fairly steady volume, although small, up to April, i.e., the movement is slow and the exports are relatively uniform over a period of eight months, from September to April.

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5. Note: In this report, production always refers to the year in which the crop is harvested.

(b) Light exports.

The Argentine exports reach a low point in March and the lightest movement is during February to May.

The United States of America exports are low during July to November, the low point being in November.

The Roumanian exports are low in January and February during the exporting season when the Danube River is frozen, and then again at the end of the season in September.

The South African exports are lightest during May to July, the low point being in May.

Table I. Argentine Maize Exports 1913-14 to 1919-20  
(thousand bushels)

Month	1913-14	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20	Average
Nov.	10,386	19,965	12,179	11,570	2,360	3,018	8,326	9,401
Dec.	9,292	17,316	10,192	8,209	3,107	3,811	11,744	9,096
Jan.	7,802	15,874	6,986	5,928	2,254	6,253	11,993	8,157
Feb.	4,066	8,493	8,362	1,974	1,462	4,007	13,702	6,009
March	3,593	6,673	2,137	2,476	1,060	3,770	7,442	3,879
April	11,009	2,983	4,298	5,561	1,070	3,555	18,446	6,704
May	7,851	8,122	6,381	287	614	5,873	10,637	5,681
June	20,038	16,235	7,285	3,404	216	7,827	14,479	9,326
July	17,171	21,663	9,098	1,761	199	8,129	10,240	9,752
Aug.	8,110	19,124	11,981	1,132	2,181	9,847	13,694	9,867
Sept.	13,279	21,700	11,271	1,569	2,724	10,358	12,576	10,468
Oct.	15,561	19,646	13,325	1,038	2,829	10,360	21,526	12,041
Total	119,946	175,799	114,521	47,304	20,070	76,814	156,805	101,608

6. Statistical data in Tables I to VIII are from the bulletins and reports of the International Institute of Agriculture.

Table II. Argentine Maize Exports 1920-21 to 1928-29  
(thousand bushels)

Month	1920-21	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29	Average
Nov.	20,369	8,095	16,066	5,963	15,411	12,263	20,991	26,168	17,090	15,824
Dec.	18,651	9,582	16,834	6,349	10,380	12,665	25,015	21,024	16,665	15,236
Jan.	8,108	6,433	12,595	3,203	7,849	11,539	24,877	19,845	8,586	11,449
Feb.	5,027	6,536	4,579	1,447	4,500	7,440	20,208	7,330	5,626	6,966
March	1,870	4,788	2,441	1,603	2,365	4,326	18,452	2,165	6,122	4,903
April	2,126	3,205	3,121	8,025	1,713	7,405	17,389	15,932	20,747	8,852
May	6,241	10,180	10,200	21,141	10,105	15,251	30,089	19,566	26,101	16,578
June	11,028	8,291	18,105	27,901	17,197	21,200	35,345	36,825	26,176	22,452
July	21,530	7,291	17,066	26,292	15,908	16,456	39,605	36,247	21,944	22,704
Aug.	13,585	6,071	12,492	20,365	20,365	15,873	34,136	35,963	24,471	20,569
Sept.	13,650	9,409	13,251	23,172	12,929	20,794	30,003	25,192	23,735	19,126
Oct.	8,870	16,173	9,877	18,626	18,626	24,617	26,338	22,247	11,401	17,420
Total	132,948,95,996	136,623,166,086	137,349,169,804	322,448,268,500	205,303,181,673					

Table III. U.S.A. Maize Exports 1913-14 to 1919-20  
(thousand bushels)

Month	1913-14	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20	Average
Nov.	444	2,153	1,642	2,289	1,622	1,709	962	1,546
Dec.	772	4,780	2,790	2,891	2,445	1,014	1,526	2,317
Jan.	1,148	5,224	3,498	7,253	1,952	1,177	2,211	3,209
Feb.	927	7,885	5,151	6,597	3,203	975	1,791	3,790
March	1,169	8,815	4,837	10,834	7,658	683	1,863	5,123
April	709	9,105	5,106	6,463	8,646	698	1,147	4,863
May	538	3,735	5,336	4,838	3,792	878	750	2,838
June	925	3,844	4,811	3,719	3,279	909	835	2,617
July	575	2,160	5,493	3,146	2,009	587	1,151	2,159
Aug.	494	958	6,700	2,569	1,830	816	781	2,035
Sept.	1,152	888	3,780	980	2,469	1,209	1,035	1,642
Oct.	1,051	1,228	3,986	1,601	2,332	868	1,417	1,769
Total	9,909	50,750	53,004	53,285	41,264	11,529	15,471	33,602



Table IV. U.S.A. Maize Exports 1920-21 to 1928-29  
(thousand bushels)

Month	1920-21	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29	Average
Nov.	1,829	4,622	7,520	956	979	1,083	1,925	866	2,004	2,420
Dec.	3,041	10,243	4,759	2,044	441	3,220	1,693	1,339	6,189	3,663
Jan.	5,436	66	7,164	2,788	791	4,669	1,736	1,559	12,251	4,051
Feb.	8,144	22,054	8,700	3,391	617	2,781	1,898	4,035	8,019	6,627
March	13,373	22,689	7,500	3,868	764	2,130	2,035	3,602	4,874	6,757
April	10,426	18,484	5,271	1,979	898	2,079	1,390	3,264	2,461	5,139
May	8,536	10,200	5,063	1,711	765	1,708	1,089	1,102	905	3,449
June	11,835	11,670	1,918	877	882	1,720	456	968	905	3,470
July	14,973	14,270	1,130	507	733	1,236	213	795	772	3,848
Aug.	13,652	12,170	781	649	733	1,028	398	933	811	3,462
Sept.	18,601	9,608	1,136	697	1,121	882	2,003	610	602	3,918
Oct.	8,217	10,149	528	614	615	1,220	453	744	622	2,685
Total	119,062	148,286	51,469	20,079	13,307	23,763	15,275	19,814	30,476	50,170

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Table V. Roumania Maize Exports 1913-14 to 1919-20  
(thousand bushels)

Month	1913-14	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20	Average
Nov.	4,603	1,051	905	---	---	---	0	1,640
Dec.	4,967	894	1,500	---	---	---	0	1,840
Jan.	1,635	984	1,622	---	---	---	0	1,063
Feb.	1,603	1,654	2,796	---	---	---	0	1,513
March	4,715	1,419	4,652	---	---	---	0	2,697
April	5,794	1,896	3,793	---	---	---	0	2,871
May	9,661	1,595	6,689	---	---	---	145	4,523
June	6,913	867	6,465	---	---	---	892	3,784
July	6,825	1,998	3,394	---	---	---	938	3,286
Aug.	880	2,404	3,334	---	---	---	2,224	2,211
Sept.	931	1,117	1	---	---	---	2,596	1,161
Oct.	900	1,318	---	---	---	---	3,555	1,924
Total	39,861	17,152	---	---	---	---	10,350	22,454

7. Note: The exports from Roumania after 1919-20 are not comparable to those before this time owing to the complete change in boundaries. However, though not an exact representation of the facts, it is believed that compiling the average monthly exports as in Table V serves to represent the average seasonal movement fairly well. It should be remembered also that the post-war exports as in Table VI and the pre-war exports as in Table V do not come from the same territory.

Table VI. Roumania Maize Exports 1920-21 to 1928-29  
(thousand bushels)

Month	1920-21	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29	Average
Nov.	3,066	861	170	6,837	1,764	2,756	4,366	5,019	425	2,807
Dec.	3,528	994	173	7,854	3,894	3,728	4,905	5,456	311	3,427
Jan.	3,098	488	216	2,256	2,863	2,315	3,417	2,072	614	1,926
Feb.	2,243	438	398	1,241	2,059	1,228	5,398	2,248	287	1,727
March	4,011	918	1,043	3,376	1,712	1,350	6,565	2,350	531	2,427
April	5,726	2,432	1,389	4,187	1,557	1,803	10,376	2,453	209	3,348
May	1,000	1,153	1,677	4,343	2,638	2,626	10,422	2,799	567	3,025
June	2,001	2,097	745	2,655	2,734	2,638	10,433	2,575	79	2,884
July	4,280	2,567	1,598	1,988	1,224	2,594	4,956	1,019	165	2,266
Aug.	4,033	728	456	1,888	1,643	1,559	3,756	32	260	1,484
Sept.	1,334	246	1,541	794	558	1,248	1,720	3	346	866
Oct.	701	69	2,599	741	374	571	1,800	28	559	827
Total	35,019	12,991	12,005	38,160	22,019	24,416	66,155	28,353	4,354	27,275

Table VII. South African Maize Exports 1913-14 to 1919-20  
(thousand bushels)

Month	1913-14	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20	Average
Nov.	140	143	739	403	911	704	335	492
Dec.	220	351	996	241	1,224	1,063	211	616
Jan.	302	273	1,256	46	1,745	328	141	442
Feb.	134	289	918	196	1,798	168	43	507
March	56	144	742	442	1,867	263	0	502
April	272	181	292	1,712	1,379	418	1	608
May	395	39	318	99	449	384	1	241
June	385	25	990	210	52	371	1	291
July	360	319	349	248	285	401	13	282
Aug.	470	482	138	428	71	674	9	324
Sept.	637	609	509	456	74	571	53	416
Oct.	419	1,039	7	1,366	564	269	167	547
Total	3,790	3,894	7,254	6,750	9,425	5,621	979	5,421

Table VIII. South African Maize Exports 1920-21 to 1928-29  
(thousand bushels)

Month	1920-21	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29	Average
Nov.	549	1,078	254	2,340	615	7,299	169	1,677	2,031	1,779
Dec.	263	286	346	553	367	3,460	228	351	119	664
Jan.	346	968	86	117	977	1,783	52	1,831	82	694
Feb.	619	826	26	7	583	722	71	2,897	91	649
March	1,319	1,250	376	220	1,243	295	71	748	397	658
April	2,348	953	401	444	141	565	59	1,486	775	796
May	1,595	453	88	335	9	272	3	512	386	406
June	596	417	590	324	0	272	1	220	43	274
July	609	368	2,140	58	124	59	20	1,713	508	620
Aug.	1,373	2,003	5,610	0	2,797	256	661	5,594	2,728	2,356
Sept.	1,572	1,345	3,730	44	9,113	217	2,158	3,268	3,929	2,817
Oct.	2,139	626	4,243	48	7,534	91	2,074	1,854	2,661	2,463
Total	13,327	10,576	17,889	4,489	23,500	15,270	6,427	20,330	13,751	13,951

8. Note: For the years 1921-22 to 1923-24 for which the data given by the International Institute of Agriculture were lacking, the Bureau of Agricultural Economics, U.S.D.A., kindly supplied the monthly export figures.



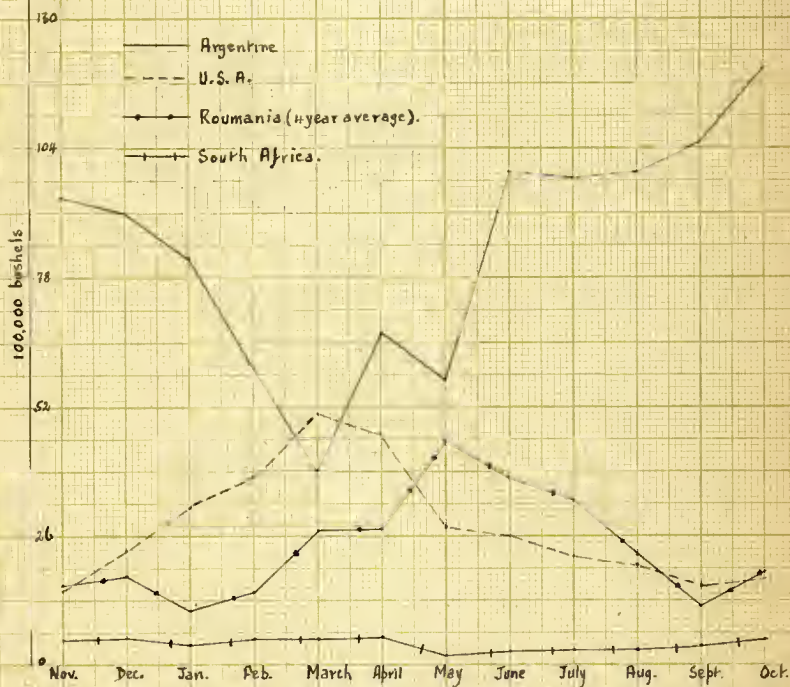


Fig. 1. Average Monthly Maize Exports for 7 years 1913-14 to 1919-20.

The Post-War Years. (See Fig. 2).

(a) Heavy exports.

The Argentine movement is faster after the harvest than during pre-war years. The exports increase from March to July, the peak being reached in June-July and the heaviest shipments taking place during May to September.

The United States of America exports also move slightly faster than in pre-war years, the heavy movement coming during January to April and the movement increasing from November to a peak in March.

The Roumanian exports are decidedly earlier than during the former years. There is a relatively big movement in November and December and then a second heavy shipment in April to June, the peak months being December and April.

The South African exports show the same more rapid movement than in pre-war years even more strikingly than the Argentine and Roumanian exports do. The exports increase rapidly after July to a peak in September with the heaviest shipments during August to November.

The more rapid movement of exports after the harvest in this period, is probably caused by increased efficiency in transporting and handling, and also in the case of Roumania by the peasants marketing more of their crop

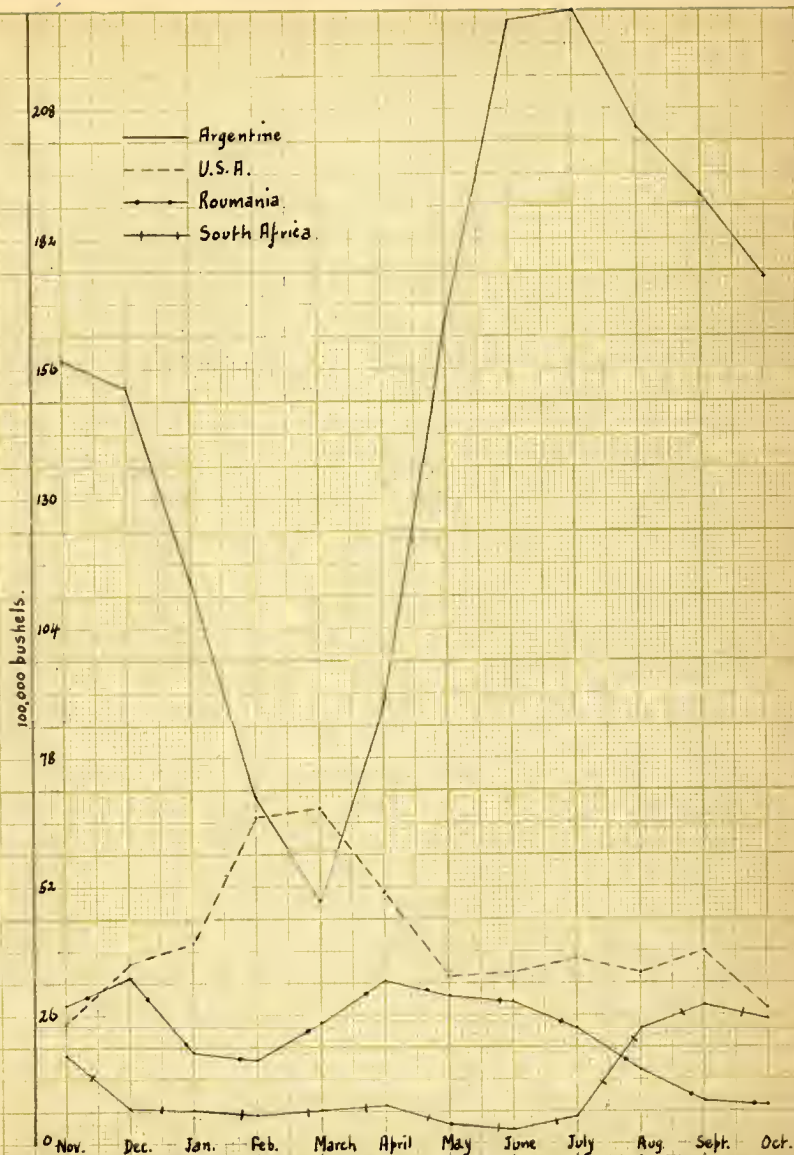


Fig. 2. Average Monthly Maize Exports for 9 years 1920-21 to 1928-29.

immediately after harvest than during the days when they were under the protection and control of large estate owners.

(b) Light exports.

The Argentine shipments decrease after July reaching a low point in March, with the lightest movement during February to April.

The United States of America exports fall after March to May being smallest in October and November with the low point in the latter month.

The Roumanian exports are light in January and February and then after April decrease gradually, movements being light again during August to October with the low point in October.

The South African exports decrease from September to December and remain low from December to July, with May to July as the lightest period and June the low point.

Most Frequent Monthly Increases in Exports. Figure 3 shows that the Argentine exports have a decided tendency to increase during the months April, May and June, but in pre-war years, when the movement is slower, after the first heavy movement in April, there is a decided tendency to decrease in May. (Compare figure 1). In post-war years



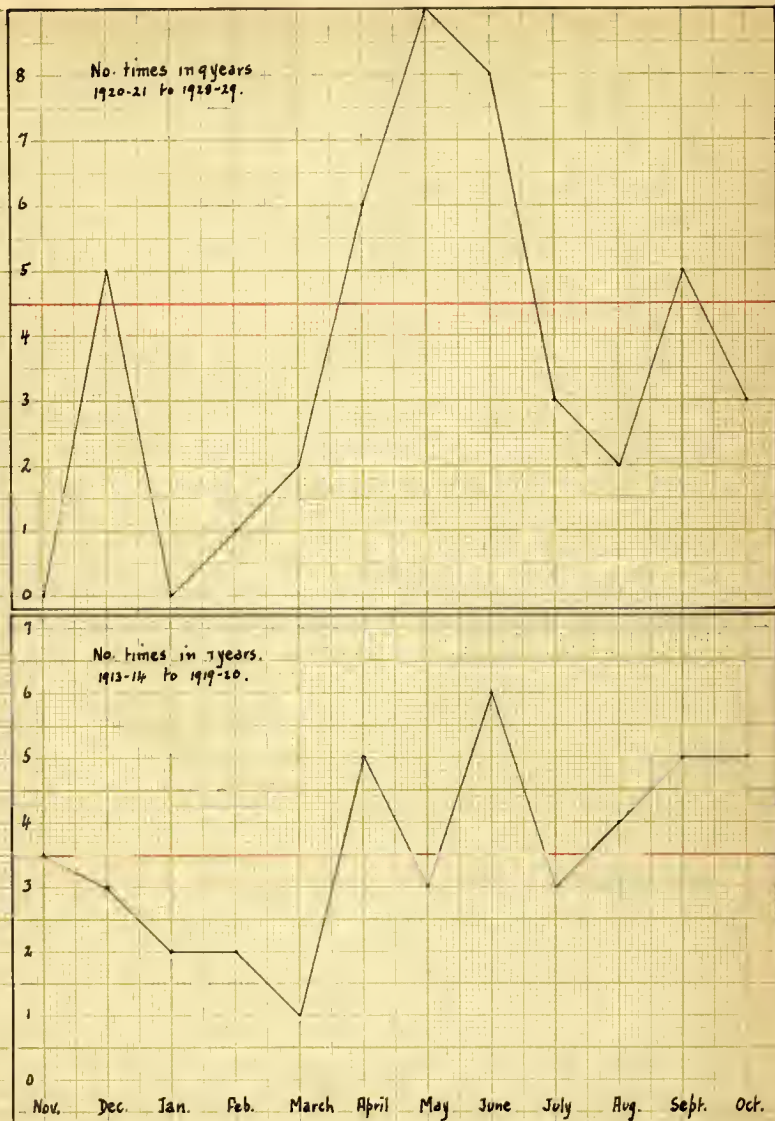


Fig. 3. Argentina - Most Frequent Monthly Increases in Exports.



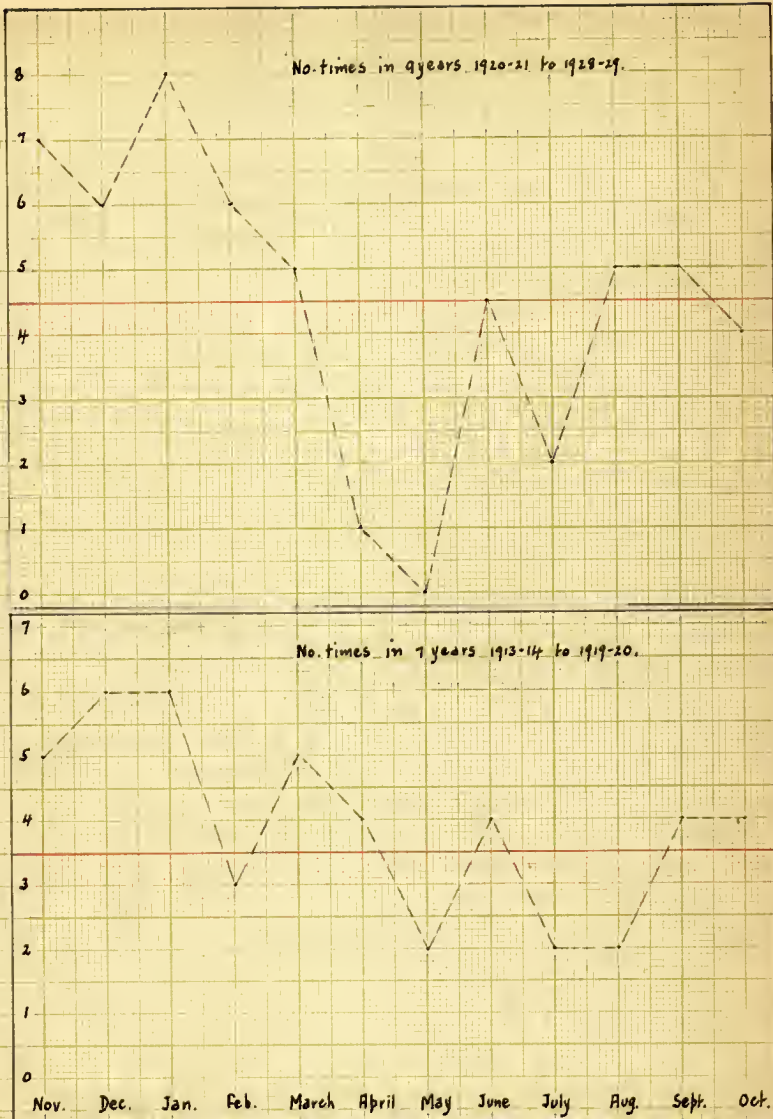


Fig. 4. U.S.A. - Most Frequent Monthly Increases in Exports.

(compare figure 2) there is the heavy movement after harvesting in March; in September-October there is usually some movement just before seeding; during planting time and the summer months the movement is weak, but in December there is a tendency to sustain the heavier movement, showing shipments just after seeding.

The United States of America is on a basis of increasing exports from November to March, January being the strongest month (compare figure 4 with figures 1 and 2). In pre-war years the movement is sustained longer, April still being a fairly strong month. During seeding time and the summer months, exports are weak, but June shows an even chance of picking up when the new crop is on its way, and again in September there is an increased movement due to clearing out the old crop especially when farmers store for a feeding programme until assured of a good new crop.<sup>9</sup>

Roumania has two distinct periods of increasing exports during the season (see figure 5). Just after the harvest the first exporting movement takes place in November and December, and the strength of this movement depends on the immediate subsistence needs of the peasants and the climatic conditions determining the maturity of the

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9. Agric. Expt. Station, Iowa - "The Movement of Iowa's Commercial Corn and Oats."

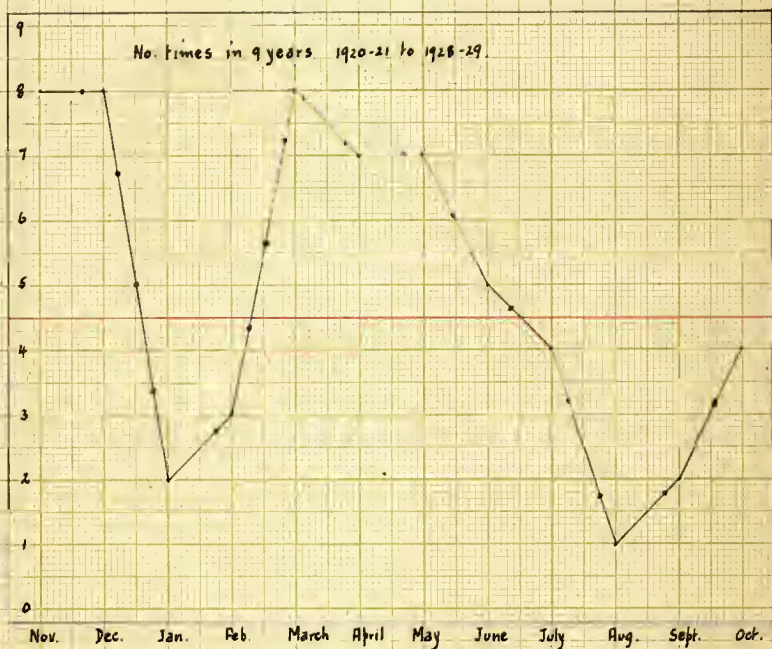


Fig. 5. Roumania - Most Frequent Monthly Increases in Exports.



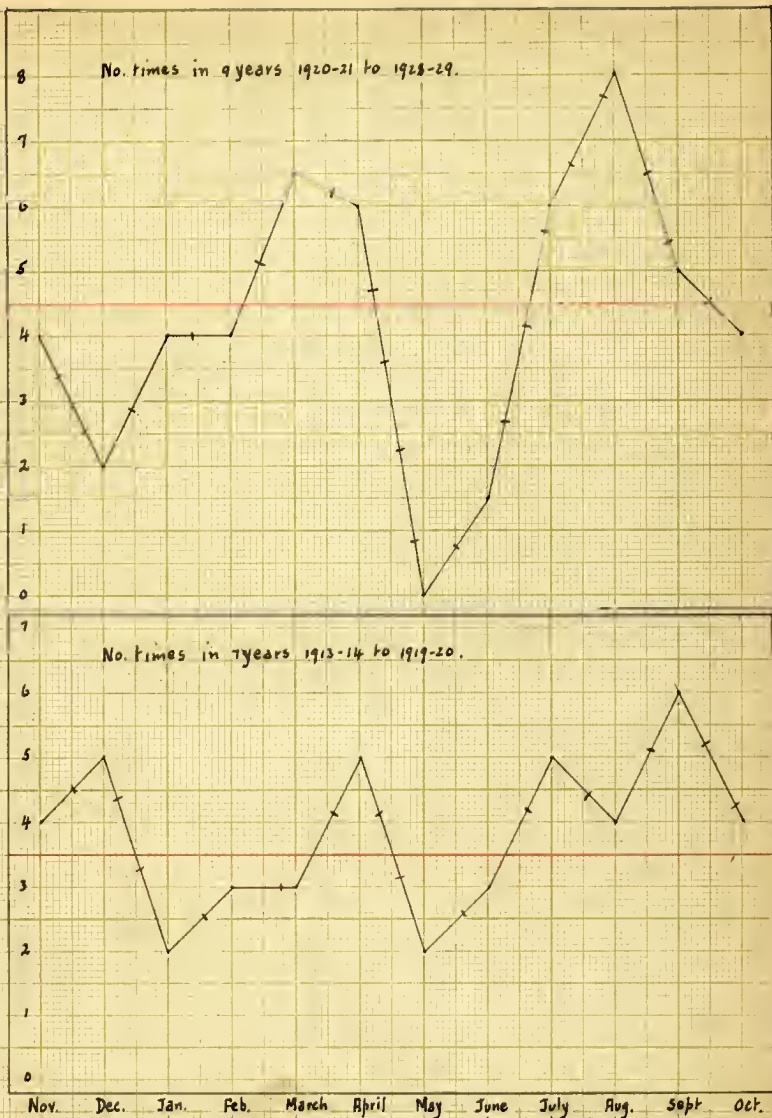


Fig. 6. South Africa - Most Frequent Monthly Increases in Exports

crop. Then follows a clear break in the movement during January and February when the River Danube is frozen to transportation. The rest of the movement takes place at the end of winter and in spring showing a tendency to strongly increasing exports in March and a strong tendency to maintain this during April to June (compare figures 5 and 2).

The South African period of most frequent monthly increases comes during July to September after the harvest, and then again towards the end of the season when the new crop is well on its way there is a strong clearing out movement in March and April (see figure 6). The weak period comes during the harvesting months May and June and during the summer months October to February (compare figures 6 and 2). In pre-war years there is this same general tendency, but the movement is much slower thus showing increasing exports from July to December.

#### Competing Movements.

##### (a) Pre-War Years. (See Fig. 1).

From November to March the Argentine exports are decreasing and the United States of America and Roumanian exports are increasing. During this period then, the United States of America and Roumania are most likely to have an influence on world markets.

During March to May the Argentine and Roumania are on an increasing basis while other exports decline



so that in this period Roumania competes most strongly with the Argentine.

From May to October Argentine is on a basis of strongly increasing exports while other exports decline.

In general, during these years, Argentine exports dominate the movements while the South African remain insignificant. The Argentine and United States of America exports increase and decrease directly in opposition; so also the Argentine and Roumanian, except during March to May; the United States of America exports are important in March while those of Roumania are important in May; the United States of America and Roumanian exports supplement the Argentine movement so that the sum of all the exports constitute a fairly even flow through the season.

(b) Post-war years. (See Fig. 2).

During November to March the Argentine exports are decreasing strongly while the United States of America exports increase. The Roumanian and South African exports are generally decreasing. In this period the United States of America movement is thus most likely to exert an influence on the world markets.

From March to April all exports are increasing with the exception of those from the United States of America. In this period of small exports, Roumania is

most likely to have an influence on international trade.

During April to July the Argentine is on a basis of strongly increasing exports while all other exports decrease. In the period July to October, South Africa's exports increase and reach a peak when all other exports decrease. During this period then South Africa will exert its biggest influence on the export trade.

In general, all exports are larger than in pre-war years, except those from Roumania (in spite of the fact that this country has doubled its size since then). The Argentine exports dominate all other exports even more than before; the United States of America exports remain important in March; the Roumanian exports have lost their former importance in May; and the South African exports have now become a factor in the movement during August to October.

The United States of America and Argentine exports change in opposition except during July to October. The United States of America and Roumanian exports, except during December to February and March to April move in similar directions. The export movements from Argentine and South Africa resemble each other, only the small movement comes earlier for Argentine (around March), than for South Africa (around June), and South Africa's heavy exporting period (August to October) comes later than that from

Argentine (June-July), so that the South African movement is generally about three months later than the Argentine.

Lastly, exports do not supplement one another as during pre-war years. Only the United States of America exports heavily when Argentine exports are at a minimum. Thus the international movement from these four sources is greater during the six months November to April than during the period May to October and the total exports are light in the period round March. Of the total exports from these four countries, the Argentine supplies an average of more than sixty per cent all months except during February, March and April (see figure 7), and even in March the Argentine exports are still more than one-third of the total.

In this connection it is interesting to note that the world export movement of maize, is essentially similar to the situation just described of heavier exports during the period May to October than during November to April.<sup>10</sup> For the years 1923-24 to 1926-27 an average of about 159 million bushels are shipped from all countries from May to October, or  $26\frac{1}{2}$  million bushels a month, as against 104 million bushels from November to April, or 17 million

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10. U.S. Dpt. Com. - "International Trade in Corn", page 11.

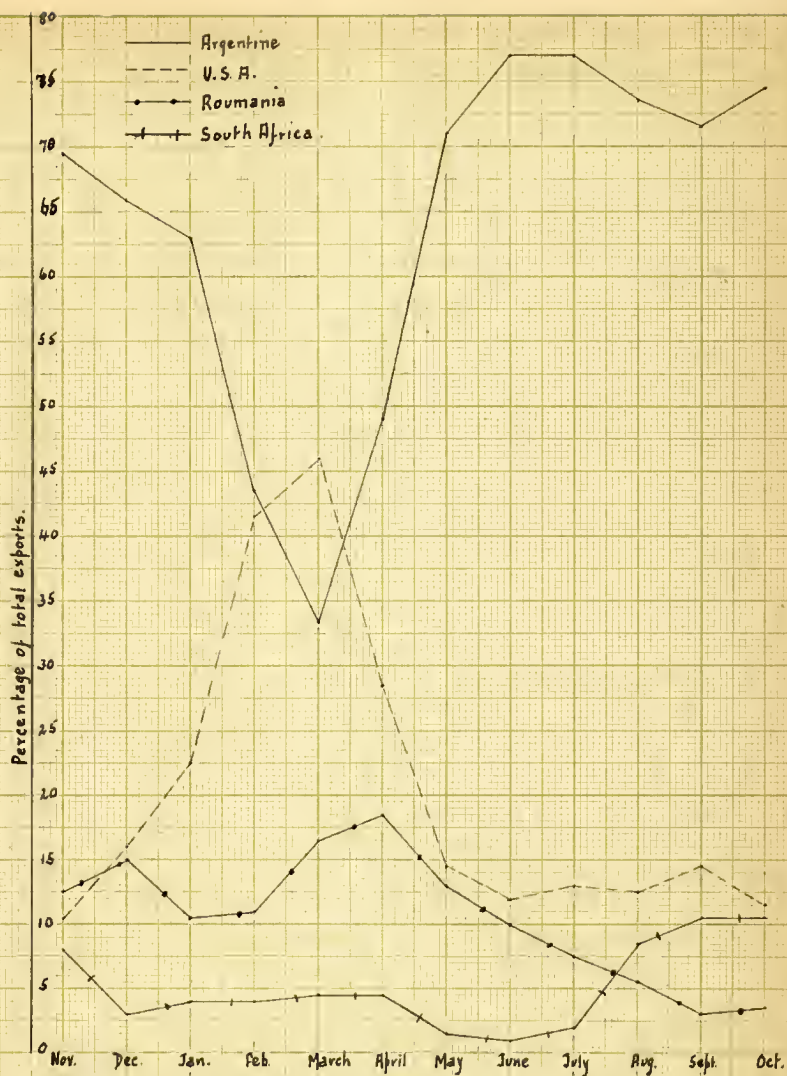


Fig. 7. Relative Importance & Competition of Exports.  
 Percentage each country's export of total of 4 countries - av. monthly 1920-21 to 1928-29.



bushels a month. For these years the percentage of the total crop-year movement taking place in the two six month periods are therefore, sixty and forty per cent.

#### The Export Movement According to Destination

From the Various Sources. The Argentine ships a large amount to "Order" and nearly as large a quantity to the Continent of Europe. These two types of shipments constitute by far the bulk of the exports, while only a small amount is given as being shipped directly to the United Kingdom and still less goes to Non-European ports. While the former two types of shipments follow the normal trend of movement, the latter two do not follow this closely (figure 8).

The greatest part of the United States of America exports are shipped to the Continent while a smaller amount goes to the United Kingdom and "Orders"<sup>11</sup> and to Non-European countries. These shipments to the Continent and to the United Kingdom and "Orders" follow the normal American export trend, but those to Non-Europe do not conform to the general movement but instead retain a remarkably even flow through the season. The trend of the exports in these recent years (1925 to 1930) shows a sharp rise from November to

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11. Note: "Broomhall's Corn Trade News" does not give the U.S.A. shipments to the United Kingdom separately from those to "Orders."



January and then a sharp decline to June (figure 9), thus seeming to show a quicker export movement for recent years than for the average of the nine preceding years studied (1920-21 to 1928-29), namely, in the last few years the peak export month is January whereas, the peak exports in the other period studied comes in February and March.

Table IX.<sup>12</sup> Argentine Maize Exports to the United Kingdom 1925 to 1930  
(thousand quarters)

Month	1925	1926	1927	1928	1929	1930	Average
Jan.	115	334	328	132	100	219	204
Feb.	87	113	183	19	121	144	111
March	15	70	167	13	49	112	71
April	16	113	184	77	127	127	107
May	47	117	411	217	125	102	170
June	133	91	241	222	114	54	142
July	130	134	411	252	140	202	211
Aug.	276	170	357	251	240	192	248
Sept.	26	75	282	142	210	211	157
Oct.	46	268	361	70	92	278	186
Nov.	198	352	330	198	157	244	246
Dec.	297	222	284	273	206	303	264
Total	1,386	2,059	3,539	1,866	1,681	2,188	2,117

12. Export figures contained in Tables IX to XXII were compiled from "Broomhall's Corn Trade News."

With the exception of Tables XIX, XX, XXI and XXII, the monthly exports were obtained by adding together the weekly shipments. These exports will probably not check accurately with monthly exports, since the weekly exports covering each month most nearly were added, and not the daily exports of each month.

For Tables XIX to XXII for the South African exports, the Official Monthly Exports as given by Broomhall, were taken, since the weekly South African export record as given by Broomhall is deficient in many cases.

Table X. Argentine Maize Exports to "Orders" 1925 to 1930  
(thousand quarters)

Month	1925	1926	1927	1928	1929	1930	Average
Jan.	430	652	1,473	1,016	404	619	766
Feb.	231	390	1,568	422	328	700	573
March	122	134	860	59	230	247	275
April	56	270	733	827	1,355	432	612
May	361	1,057	1,735	1,010	1,221	444	971
June	980	1,203	1,978	1,854	1,411	372	1,299
July	862	894	1,784	2,513	1,268	988	1,351
Aug.	1,353	1,044	2,125	1,769	1,518	883	1,449
Sept.	701	1,380	1,476	1,675	1,339	886	1,243
Oct.	625	1,060	1,392	1,496	662	849	1,014
Nov.	753	947	1,057	639	694	920	835
Dec.	539	1,053	1,161	901	856	1,255	961
Total	7,013	10,084	17,142	13,981	11,286	8,595	11,249

Table XI. Argentine Maize Exports to the Continent  
1925 to 1930  
(thousand quarters)

Month	1925	1926	1927	1928	1929	1930	Average
Jan.	365	427	1,630	1,001	434	544	733
Feb.	200	371	948	341	228	628	453
March	146	402	397	84	239	479	291
April	105	456	899	926	1,055	633	679
May	485	676	1,634	874	1,011	385	844
June	1,081	918	1,617	1,558	1,503	682	1,210
July	657	551	1,786	2,223	1,081	1,067	1,227
Aug.	621	762	1,915	1,715	1,034	1,141	1,198
Sept.	653	763	1,284	1,289	991	1,372	1,058
Oct.	563	1,344	1,611	1,271	499	1,011	1,050
Nov.	636	1,699	1,286	1,196	511	932	1,051
Dec.	472	1,293	1,261	1,084	1,054	841	1,000
Total	6,034	9,063	16,168	13,562	9,640	9,715	10,794

Table XII. Argentine Maize Exports to Non-Europe  
1925 to 1930  
(thousand quarters)

Month	1925	1926	1927	1928	1929	1930	Average
Jan.	58	5	15	11	10	17	19
Feb.	7	5	8	4	3	29	9
March	9	4	9	6	7	26	10
April	0	3	13	15	24	3	10
May	34	129	66	12	46	69	59
June	64	36	137	276	62	69	107
July	19	56	282	152	29	50	98
Aug.	17	34	285	49	64	122	95
Sept.	10	56	249	12	245	176	124
Oct.	6	24	215	55	56	44	66
Nov.	6	39	8	23	37	52	27
Dec.	11	17	9	8	32	38	19
Total	241	408	1,296	623	615	695	643

Table XIII. U.S.A. Maize Exports to the United Kingdom  
and to "Orders" 1925 to 1930  
(thousand quarters)

Month	1925	1926	1927	1928	1929	1930	Average
Jan.	0	62	36	39	476	0	102
Feb.	0	35	26	68	276	0	68
March	1	15	12	59	99	0	31
April	0	29	26	40	15	0	18
May	0	4	9	2	4	0	3
June	0	6	0	1	3	0	2
July	0	14	0	38	0	11	11
Aug.	0	1	0	63	0	0	11
Sept.	33	9	0	0	4	0	8
Oct.	0	2	3	0	0	0	1
Nov.	0	2	17	51	0	0	12
Dec.	123	18	25	181	0	0	58
Total	157	197	154	542	877	11	325

Table XIV. U.S.A. Maize Exports to the Continent  
1925 to 1930  
(thousand quarters)

Month	1925	1926	1927	1928	1929	1930	Average
Jan.	0	190	8	90	1,103	0	232
Feb.	2	70	37	317	427	1	142
March	0	72	42	187	202	3	84
April	11	50	33	221	81	0	66
May	0	19	55	10	34	1	20
June	10	10	11	9	15	0	9
July	11	0	8	15	22	0	9
Aug.	0	0	0	8	15	0	4
Sept.	15	0	0	0	3	0	3
Oct.	30	2	0	5	0	0	6
Nov.	0	0	15	50	0	0	11
Dec.	152	7	86	313	0	0	93
Total	231	420	295	1,225	1,902	5	679

Table XV. U.S.A. Maize Exports to Non-Europe  
1925 to 1930  
(thousand quarters)

Month	1925	1926	1927	1928	1929	1930	Average
Jan.	8	17	20	51	33	26	26
Feb.	8	24	25	85	24	20	31
March	8	56	63	85	21	23	43
April	12	46	77	66	26	32	43
May	12	22	74	76	33	22	40
June	13	30	141	53	20	14	45
July	15	20	49	54	29	21	31
Aug.	24	24	31	67	37	18	34
Sept.	20	30	14	50	38	9	27
Oct.	20	25	16	57	25	10	26
Nov.	16	22	22	28	19	11	20
Dec.	20	29	19	23	22	12	21
Total	176	345	551	695	327	218	387



Table XVI. South Russian, Danubian and Bulgarian Maize  
Exports to the United Kingdom 1925 to 1930  
(thousand quarters)

Month	1925	1926	1927	1928	1929	1930	Average
Jan.	8	33	101	0	0	88	38
Feb.	3	45	17	0	0	19	14
March	0	0	21	2	0	25	8
April	0	9	24	0	0	21	9
May	1	7	0	0	0	77	14
June	18	46	40	0	0	163	45
July	0	17	44	0	0	206	45
Aug.	0	54	0	0	1	16	12
Sept.	0	15	0	0	8	4	5
Oct.	0	14	1	0	0	10	4
Nov.	0	10	4	0	12	14	7
Dec.	20	17	0	0	65	24	21
Total	50	267	252	2	86	667	222

Table XVII. South Russian, Danubian and Bulgarian Maize  
Exports to "Ports of Call and Orders"  
1925 to 1930  
(thousand quarters)

Month	1925	1926	1927	1928	1929	1930	Average
Jan.	128	139	210	0	0	0	80
Feb.	128	151	104	0	0	23	68
March	153	38	73	0	0	16	47
April	84	69	147	0	0	16	53
May	243	406	236	0	0	25	152
June	453	278	100	0	0	204	169
July	134	91	17	0	0	194	73
Aug.	177	55	31	0	0	75	56
Sept.	78	73	26	0	0	0	30
Oct.	0	16	0	0	0	30	8
Nov.	69	82	14	0	0	18	31
Dec.	130	180	33	0	48	60	75
Total	1,757	1,578	991	0	48	661	842

Table XVIII. South Russian, Danubian and Bulgarian Maize  
Exports to the Continent 1925 to 1930  
(thousand quarters)

Month	1925	1926	1927	1928	1929	1930	Average
Jan.	353	115	357	174	9	238	204
Feb.	321	166	285	102	0	246	187
March	368	156	431	258	0	326	257
April	193	257	459	518	0	329	259
May	444	533	730	106	0	459	379
June	369	433	537	170	0	802	385
July	158	254	344	72	6	573	235
Aug.	163	115	121	21	4	359	127
Sept.	177	51	39	24	1	209	84
Oct.	97	43	85	8	29	89	58
Nov.	100	201	234	0	276	309	187
Dec.	220	323	382	4	748	337	356
Total	2,943	2,647	4,002	1,257	1,073	4,256	2,698

Table XIX. South African Maize Exports to the United  
Kingdom 1927-28 to 1929-30  
(thousand quarters)

Month	1927-28	1928-29	1929-30	Average
Nov.	9	45	93	49
Dec.	8	0	25	11
Jan.	29	8	27	21
Feb.	44	16	32	31
March	56	26	74	52
April	7	28	73	36
May	49	42	1	31
June	18	18	48	28
July	47	52	141	80
Aug.	181	138	141	153
Sept.	90	165	164	146
Oct.	59	81	145	95
Total	597	639	964	733

Table XX. South African Maize Exports to "Orders"  
1927-28 to 1929-30  
(thousand quarters)

Month	1927-28	1928-29	1929-30	Average
Nov.	83	110	40	78
Dec.	55	0	0	18
Jan.	77	0	0	26
Feb.	81	0	0	27
March	27	0	6	11
April	0	0	0	0
May	0	0	0	0
June	0	0	0	0
July	131	0	134	88
Aug.	118	94	216	143
Sept.	146	80	177	134
Oct.	86	101	154	113
Total	804	385	727	638

Table XXI. South African Maize Exports to the Continent  
1927-28 to 1929-30  
(thousand quarters)

Month	1927-28	1928-29	1929-30	Average
Nov.	32	14	2	16
Dec.	5	6	3	5
Jan.	3	1	17	7
Feb.	101	7	6	38
March	138	60	1	66
April	43	5	10	19
May	14	2	0	5
June	19	1	0	7
July	128	16	95	80
Aug.	318	107	207	211
Sept.	111	189	310	203
Oct.	99	53	167	106
Total	1,011	461	818	763

Table XXII. South African Maize Exports to Non-Europe  
1927-28 to 1929-30  
(thousand quarters)

Month	1927-28	1928-29	1929-30	Average
Nov.	3	0	7	3
Dec.	0	4	0	1
Jan.	0	0	5	2
Feb.	0	0	9	3
March	0	2	2	2
April	0	0	1	0
May	0	0	7	2
June	1	1	3	2
July	1	8	12	7
Aug.	1	6	7	5
Sept.	1	0	30	10
Oct.	1	0	77	26
Total	8	21	160	63



Fig. 8. Argentine Maize Exports.  
Av. monthly for 6 years 1925 to 1930.



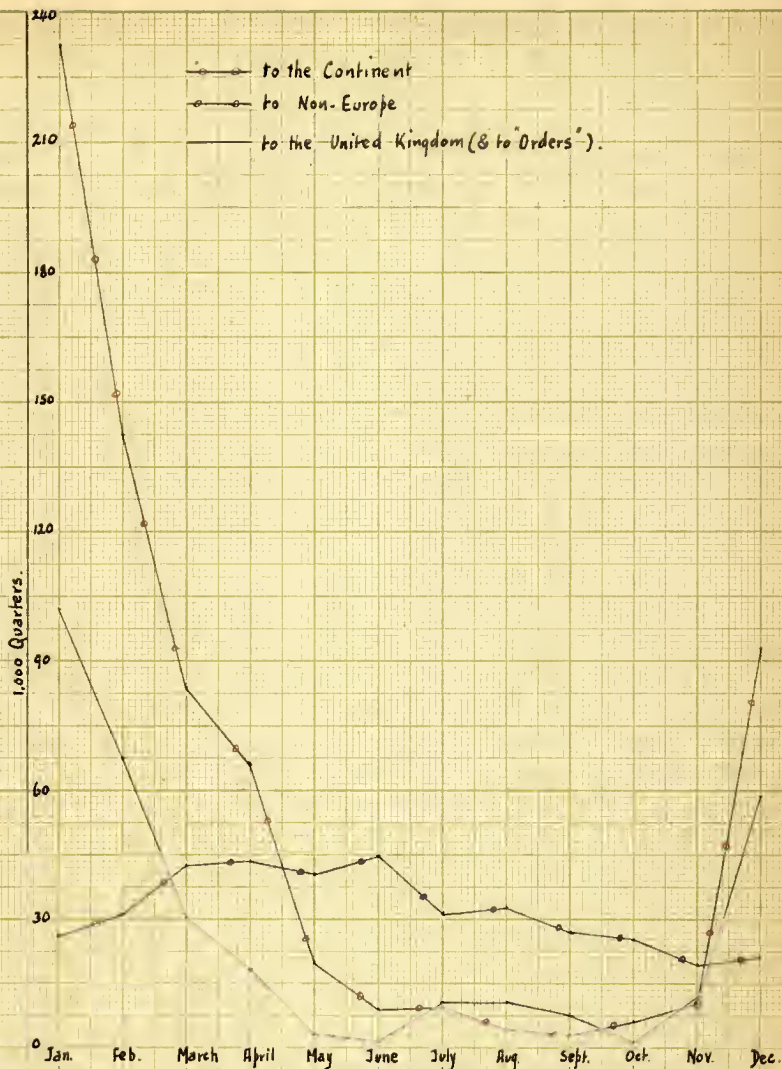


Fig. 9. U. S. A. Maize Exports.  
Av. monthly for 6 years 1925 to 1930.

Figure 10 shows that the South Russian, Danubian and Bulgarian exports of greatest importance by far go to the Continent, while a smaller amount is shipped to "Ports of Call and Orders" and a still smaller amount to the United Kingdom. These three types of shipments follow the same trend. Also, this export trend follows the Roumanian export movement studied above (1920-21 to 1928-29) very closely: increasing exports from October to December, then a definite break with a small movement in January and February, and the second heavy movement during March to June (compare figures 10 and 2). There are, in contrast to the other exporting countries, no shipments to Non-Europe.

Of the South African exports, those to the Continent are largest, then follow closely those to the United Kingdom and to "Orders." (see figure 11).<sup>13</sup> These three types constitute the bulk of the shipments and the trends of these movements conform closely to one another, while a small amount is shipped to Non-Europe and the trend in this case seems to increase during September and October when the bulk of the movement is already decreasing rapidly. These export movements are similar in trend to those of the

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13. Note: Data for 3 years only were able to be compiled from "Broomhall's Corn Trade News."

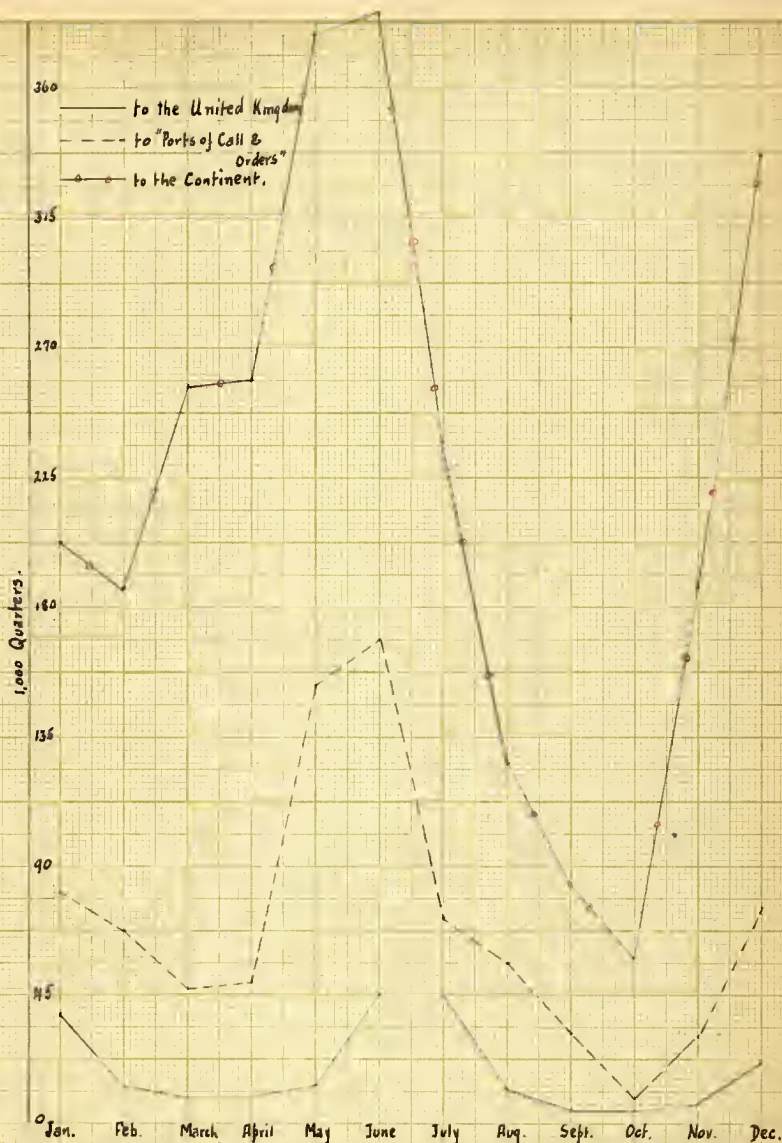


Fig. 10. South Russian, Danubian & Bulgarian Maize Exports.  
 Av. monthly for 6 years—1925 to 1930.

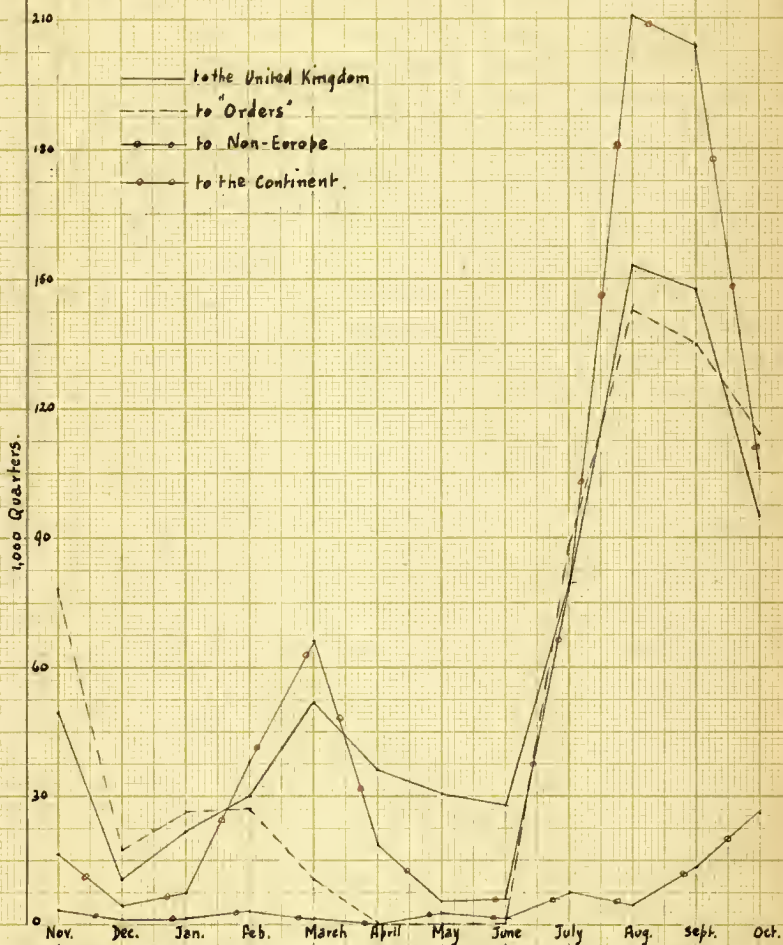


Fig. 11. South African Maize Exports.  
Av. monthly for 3 years 1927/28 to 1929/30.



period 1920-21 to 1928-29, studied above (see figure 2), except in so far that in these later years the peak movement is reached a little earlier, namely in August instead of in September.

To the Various Destinations.

- (a) Exports to the United Kingdom and to "Orders".  
(see figures 12 and 13).

Shipments to the United Kingdom show the dominant position of Argentine, the importance of the South African exports (compare figure 2), and the small amounts contributed by the United States of America and the European countries.

From January to March the South African exports are on the increase while all other exports are decreasing. From March to June the South African and United States of America shipments are declining while other exports are increasing; from June to August the South African and Argentine exports are strongly increasing, and after August the Argentine only is on a strong increasing basis.

These shipments to the United Kingdom, however do not represent the actual situation as some, if not the greater part, of the shipments to "Orders" go to the United Kingdom and it may be assumed that combining the exports to the United Kingdom and to "Orders and Ports of

Call" will give a more accurate representation of the competition on the United Kingdom markets.

The exports to the United Kingdom and "Orders and Ports of Call" (compare figures 13 and 2), show the dominant position of Argentine maize in the United Kingdom markets even more strikingly than the above study. The second in importance in supplying the United Kingdom markets is South Africa, and then follow the three European regions, while the United States of America exports are of minor importance.

In the period March to August, when the Argentine is on a basis of increasing exports, the European exports increase from March to June and the South African exports from June to August. From October to January, the United States of America and European regions are on an increasing basis. These shipments show the South African export trend conforming to that of the Argentine more than the average export movement of for 1920-21 to 1928-29.

Exports are heaviest to the United Kingdom from May to October when the Argentine is shipping the bulk of its exports and when South Africa plus the European exporters are supplying the greatest part of their exports. Exports are smallest to the United Kingdom from February to April, the low point being March, when Argentine is at

Table XXIII. <sup>14</sup> Average Monthly Maize Exports to the United Kingdom and to "Orders" from Argentina, the U.S.A., and South Russia, Danube Area and Bulgaria for 6 Years 1925-30, and from South Africa for 3 Years 1927-30.

(thousand quarters)

Month	Argentina	U.S.A.	Europe	South Africa <sup>15</sup>
Jan.	970	102	118	47 (1928-30)
Feb.	684	68	82	58 ( " )
March	346	31	55	63 ( " )
April	719	18	62	36 ( " )
May	1,141	3	166	31 ( " )
June	1,442	2	214	28 ( " )
July	1,563	11	117	168 ( " )
Aug.	1,696	11	68	296 ( " )
Sept.	1,400	8	34	281 ( " )
Oct.	1,200	1	12	208 ( " )
Nov.	1,081	12	37	126 (1927-29)
Dec.	1,224	58	96	29 ( " )

14. Statistics compiled from "Brocnhall's Corn Trade News."

15. Note: South African exports only from Nov. 1927 to Oct. 1930 were able to be compiled. Hence to compare South African exports to those of other exporters for the calendar years 1925 to 1930, the South South African exports were tabulated as above. Although not accurate, this however, is believed to represent the normal trend.

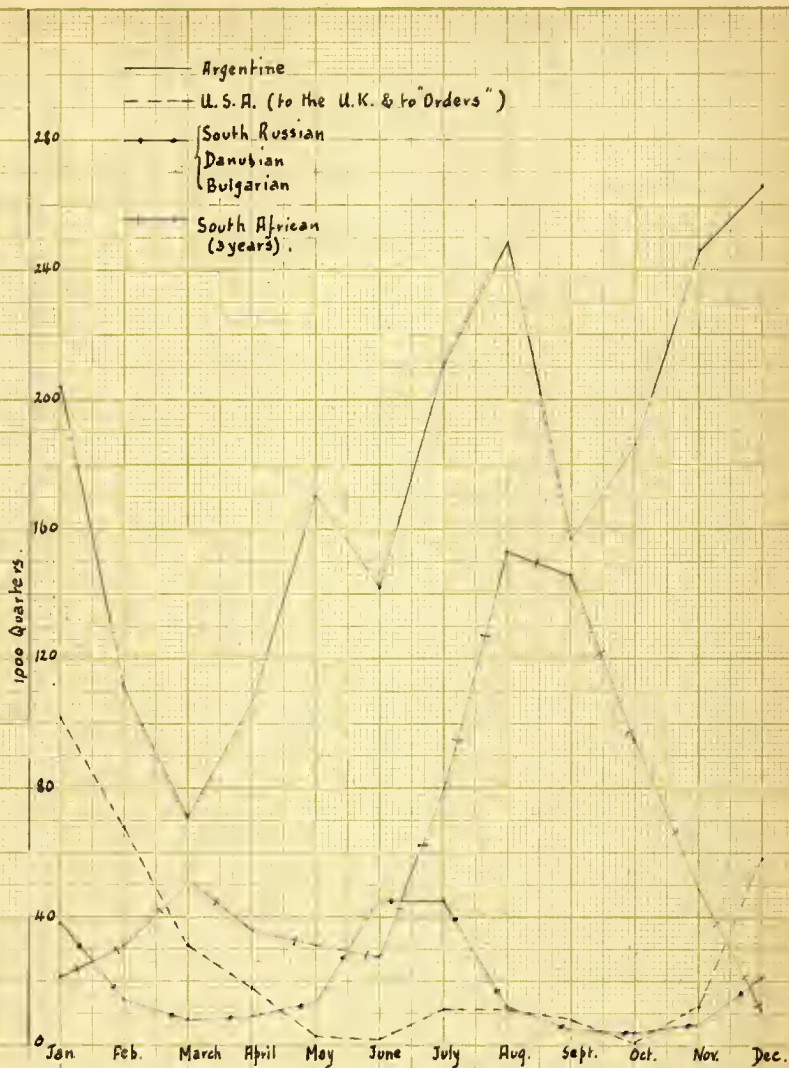


Fig. 12. Maize Exports to the United Kingdom.  
Av. monthly for 6 years 1925 to 1930.



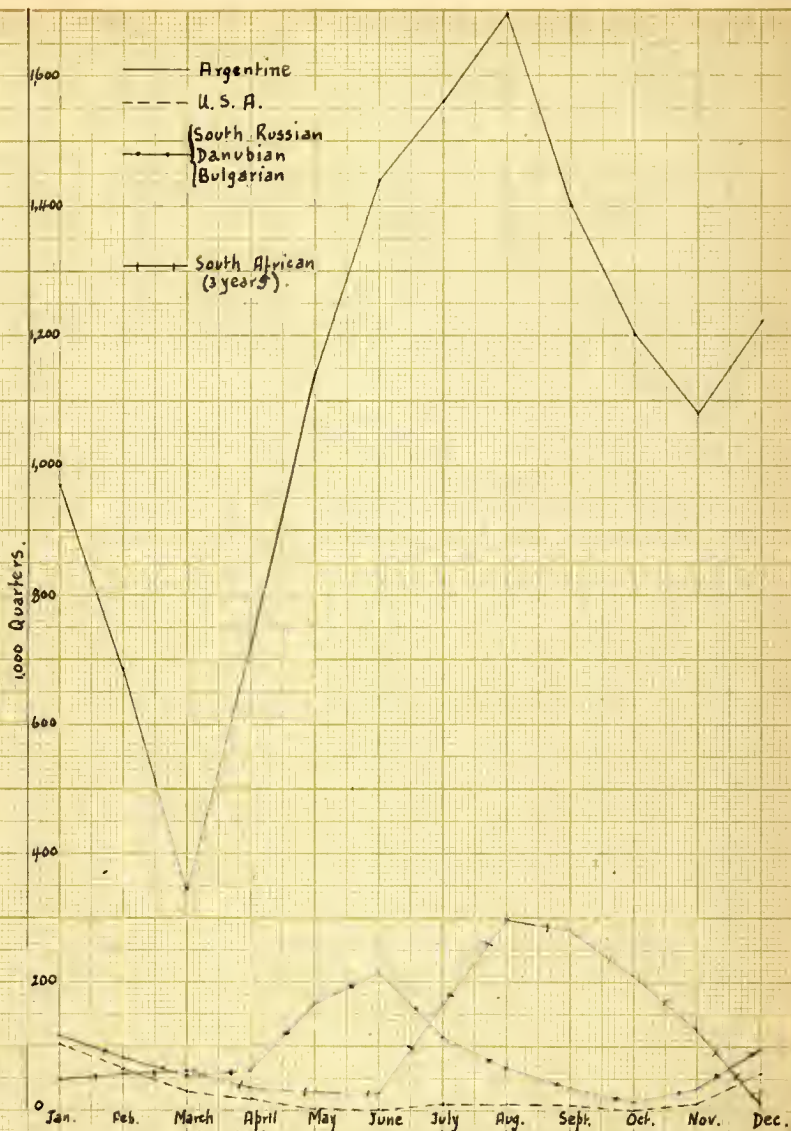


Fig. 13. Maize Exports to the United Kingdom & to "Orders & Ports of Call"  
Av. monthly for 6 years 1925 to 1930.

its weakest, when the United States of America exports are already declining, and when the European exports break temporarily in winter. The South African exports tend to increase in this period at a time when the new crop reaches maturity, and consequently the South African exports in March make up an appreciable proportion of the total.

(b) Exports to the Continent of Europe. ( see figure 14).

The Argentine shipments are again dominant, then the European exporters come next in order, and South Africa and the United States of America follow with smaller shipments. The export trends are similar to those for the United Kingdom, but South Africa becomes less important and the European countries more important in supplying the Continent. During March the Argentine exports are at a minimum as usual, but in this case they are very nearly equalled by those from Europe, and they form in March a minor part of the total exports.

(c) Exports to Non-Europe (see figure 15).

While the Argentine exports are again the most important, this is relatively less so than in the former two types of exports. The United States of America exports are relatively important and it is noticeable that they are so uniform through the year. The South African exports are relatively small, and the European exporters do not ship to Non-Europe.

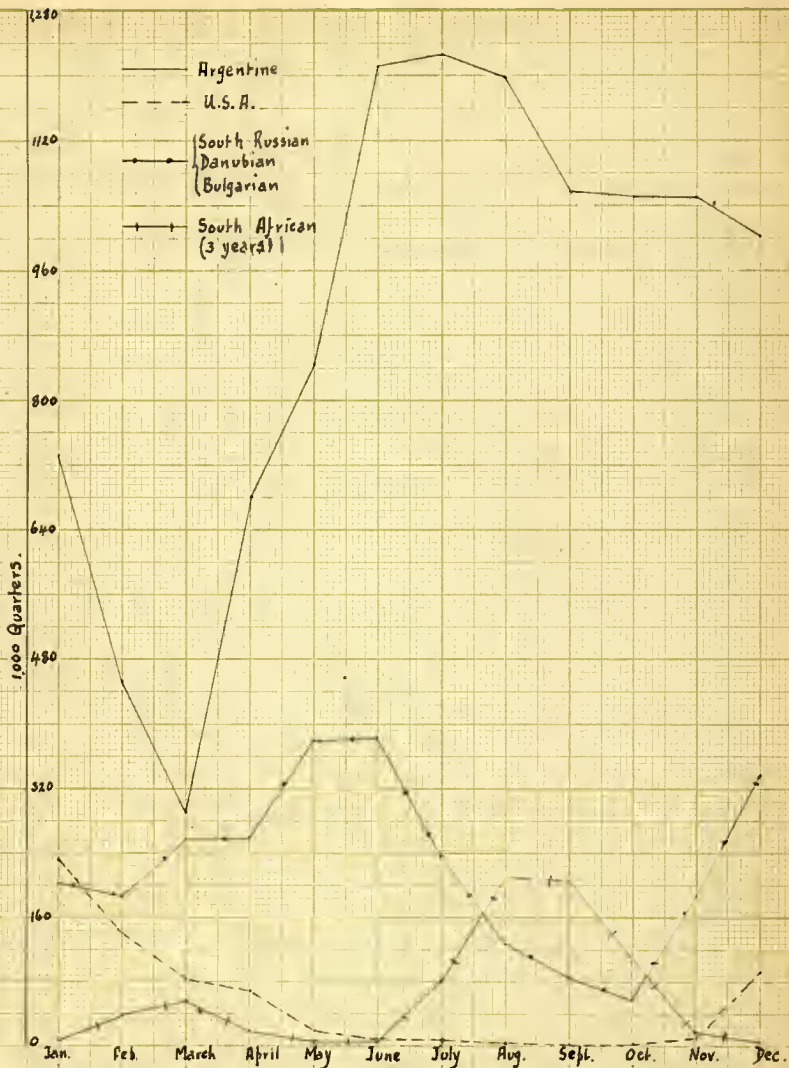


Fig. 14. Maize Exports to the Continent.  
Av. monthly for 6 years 1925 to 1930.

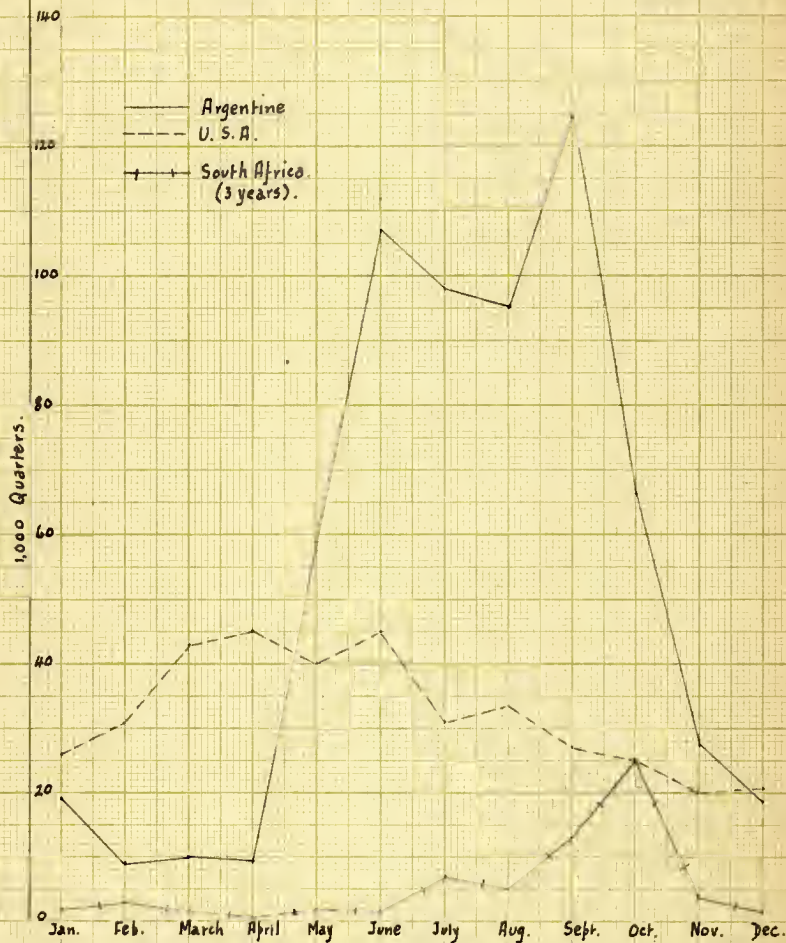


Fig. 15 Maize Exports to Non-Europe.  
 Av. monthly for 6 years 1925 to 1930.



## PART II

## PRICES AND EXPORTS

## Argentine Exports and Liverpool Prices

The Average Situation.

(a) Pre-war years. (see figure 16).

The average of the cash prices shows an upward trend through the season and there are two separate periods noticeable, namely:

1. From December to May exports are low while prices are high.
2. From May to October exports are on the increase and prices rise.

In general, this is a rising price period.

(b) Post-war years. (see figure 17).

This is in general a downward price period. The average of the cash prices at Liverpool shows a downward trend, and the season may be divided into two periods, namely:

1. From December to June exports are low and prices are high.
2. During June to October exports are decreasing while prices decline although they rise a little in July and August.



Fig. 16. Argentine Maize Exports & Prices for 7 years 1913-14 to 1919-20.

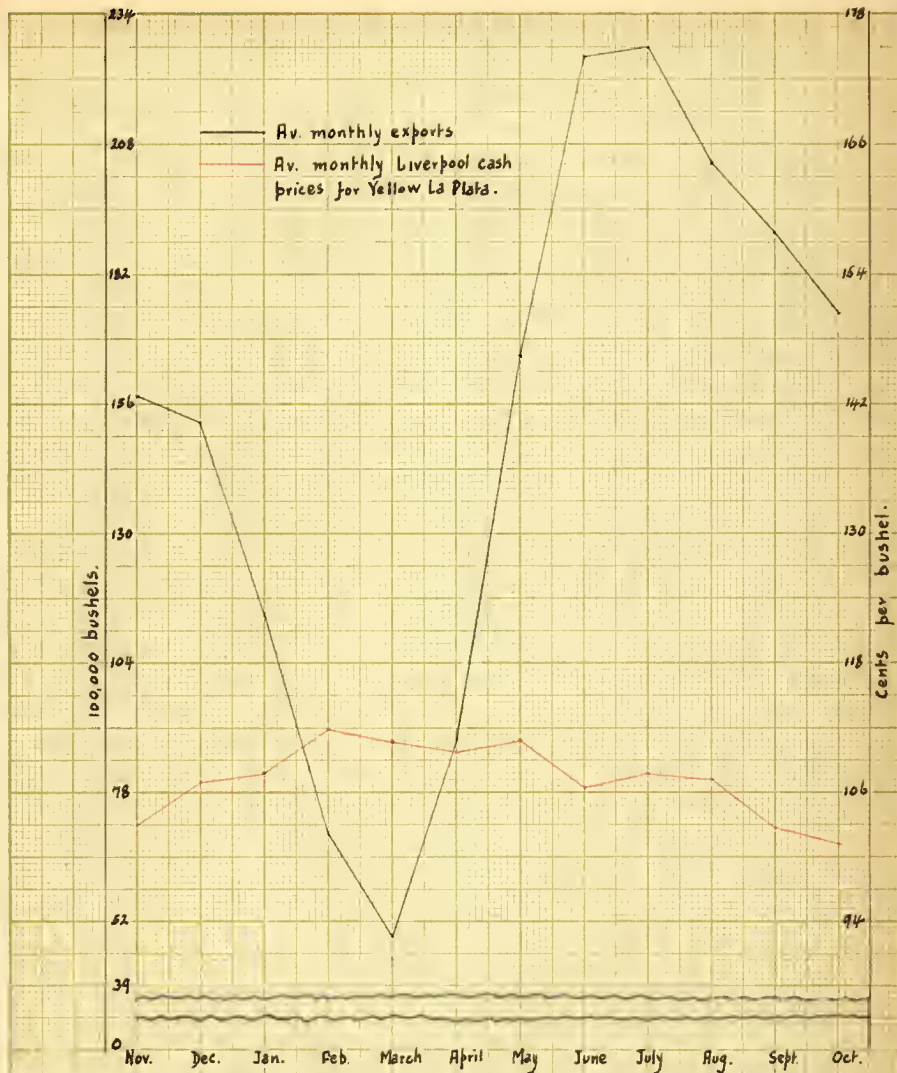


Fig. 17. Argentine Maize Exports & Prices for 9 years 1920-21 to 1928-29.

Table XXIV.<sup>16</sup> Monthly Average Liverpool Cash Prices for Yellow  
La Plata Maize 1913-14 to 1919-20  
(cents per bushel)

Month	1913-14	1914-15	1915-16	1916-17	1917-18	1918-19	1919-20	Average
Nov.	63	78	106	169	217	261	166	151.3
Dec.	67	83	119	181	217	267	152	154.3
Jan.	65	98	140	189	223	204	149	152.6
Feb.	66	106	144	192	223	204	177	158.9
March	68	102	142	200	223	175	196	158.0
April	68	106	143	216	223	174	197	161.0
May	74	111	147	223	223	174	181	151.7
June	76	97	133	217	223	172	167	155.0
July	78	92	145	217	242	165	153	156.0
Aug.	97	90	154	217	261	166	143	161.1
Sept.	93	85	139	217	261	169	160	160.6
Oct.	83	94	148	217	261	168	149	160.0
Average	75	95	138	203	233	191	166	157.3

16. Data in Tables XXIV and XXV from U.S.D.A. Statistical  
Bul. No. 28, Table 82.



Table XXV. Monthly Average Liverpool Cash Prices for Yellow  
La Plata Maize 1920-21 to 1928-29  
(cents per bushel)

Month	1920-21	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29	Average
Nov.	115	78	96	96	121	107	95	97	123	103.1
Dec.	125	98	100	102	122	110	92	104	120	107.0
Jan.	128	92	99	103	131	97	89	110	124	108.1
Feb.	122	108	104	115	129	91	93	119	127	112.0
March	130	108	105	111	114	89	87	127	124	110.6
April	128	103	109	107	111	94	88	129	120	109.9
May	118	106	114	112	130	89	94	127	107	110.8
June	109	101	110	100	128	87	93	125	104	106.3
July	105	110	102	94	127	100	91	123	118	107.8
Aug.	93	110	94	104	138	98	98	119	113	107.4
Sept.	83	109	98	114	120	90	97	107	107	102.8
Oct.	72	108	97	124	103	93	96	116	103	101.5
Average	111	102	102	107	123	95	93	117	116	107.3

### Exports and Prices by Seasons.

#### (a) Season 1920-21. (see figure 18).

From December to April exports are low and prices are high. The latter part of the season the prices drop low, and, in fact decline after April already, due to the general deflation in business and to the big United States of America crop harvested in 1921, preceded by an even bigger one in 1920 and thus causing a large percentage (5.8) of the 1921 production to be exported from the United States of America.

#### (b) Season 1921-22. (see figure 19).

During December to April exports are low and prices are up, and, with only a break during April-June when exports increased, the prices remain high in the latter part of the season. This is due to the small United States of America and Argentine crops harvested in 1922, and the big Argentine crop and exports in 1921 account for the sharp rise from the low level of November to February, 1922.

#### (c) Season 1922-23. (see figure 20).

From December to May exports are low and prices are up but fall after May. In spite of two successive small Argentine crops in 1922 and in 1923 prices break after May, due to the big United States of America crop in 1923 and also to the fair crop of Europe.

Table XXVI. Maize Production  
(thousand bushels)

23 Year	17 Argentina	18 South Africa	19 United States	20 Roumania	20 Europe (ex.Russia)	20 World (ex.Russia)
1913	196,642	34,376	2,446,988	115,000	576,000	3,890,000
1914	263,135	36,305	2,672,804	103,000	559,000	4,186,000
1915	325,178	40,123	2,994,793	86,000	520,000	4,352,000
1916	161,133	38,697	2,566,927	----	389,000	3,770,000
1917	58,839	42,780	3,065,233	----	361,000	4,178,000
1918	170,660	45,143	2,502,665	31,000	299,000	3,579,000
1919	224,239	41,422	2,811,302	141,000	454,000	4,242,000
1920	268,686	43,916	3,208,584	182,000	520,000	4,689,000
1921	230,420	47,669	3,068,569	111,000	394,000	4,315,000
1922	176,171	47,858	2,906,020	120,000	425,000	4,240,000
1923	176,103	70,585	3,053,557	151,000	468,000	4,519,000
1924	276,756	40,139	2,309,414	155,000	589,000	3,872,000
1925	186,298	86,770	2,916,106	164,000	626,000	4,530,000
1926	279,516	39,000	2,691,531	239,000	665,000	4,441,000
1927	320,853	65,203	2,763,093	139,000	479,000	4,324,000 <sup>22</sup>
1928	305,691	68,463	2,818,910	108,514	389,000	4,213,000 <sup>22</sup>
1929	231,706	65,945	2,614,132	251,414	697,000 <sup>22</sup>	----
1930	325,714	82,411	2,081,048	155,435	----	----

17,19,20. U.S.D.A. Statistical Bul. No. 26, Tables 12, 1, and 16.  
18. Official Yearbook of the Union of South Africa, No. 11, 1928-29,  
page 407.

21. Broomhall's Corn Trade News.

22. U.S.D.A. Yearbook 1930, Table 49.

23. Production of year in which crop is harvested.

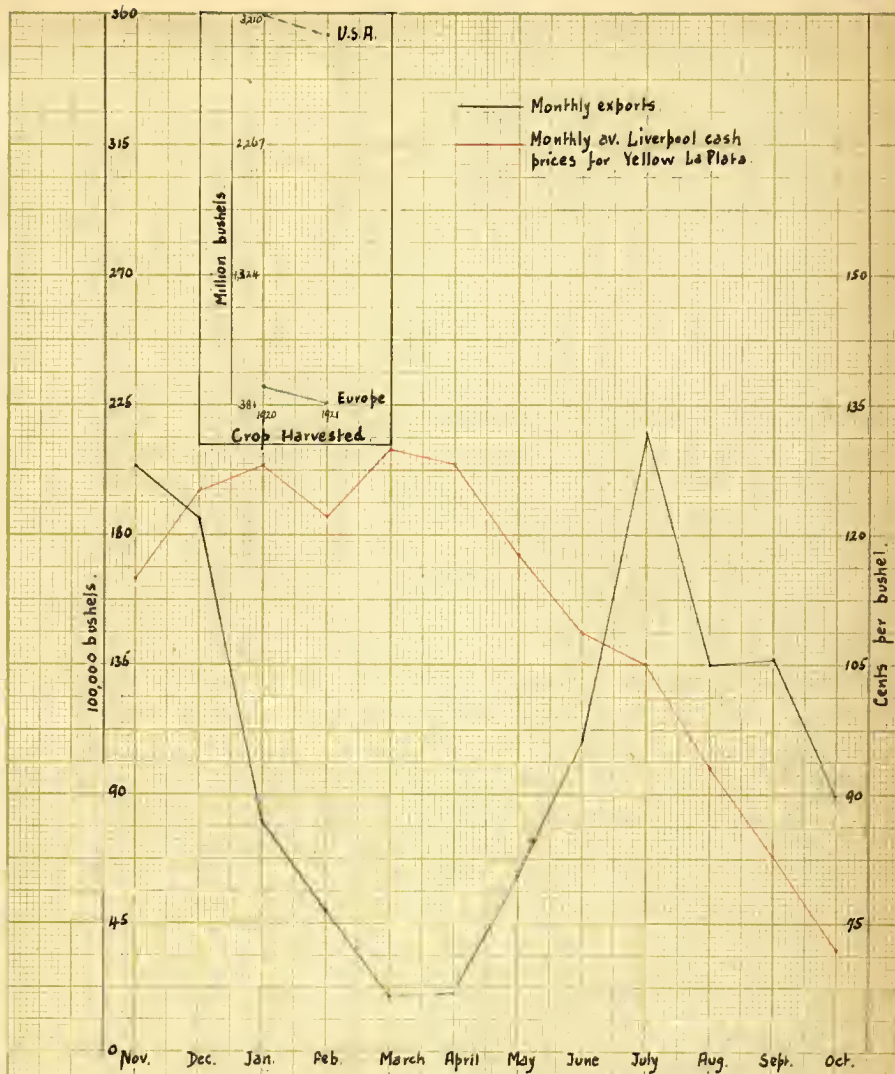


Fig. 18. Argentine Maize Exports & Prices for 1920-21.

Inset: U.S.A. & Europe (ex. Russia) Production.



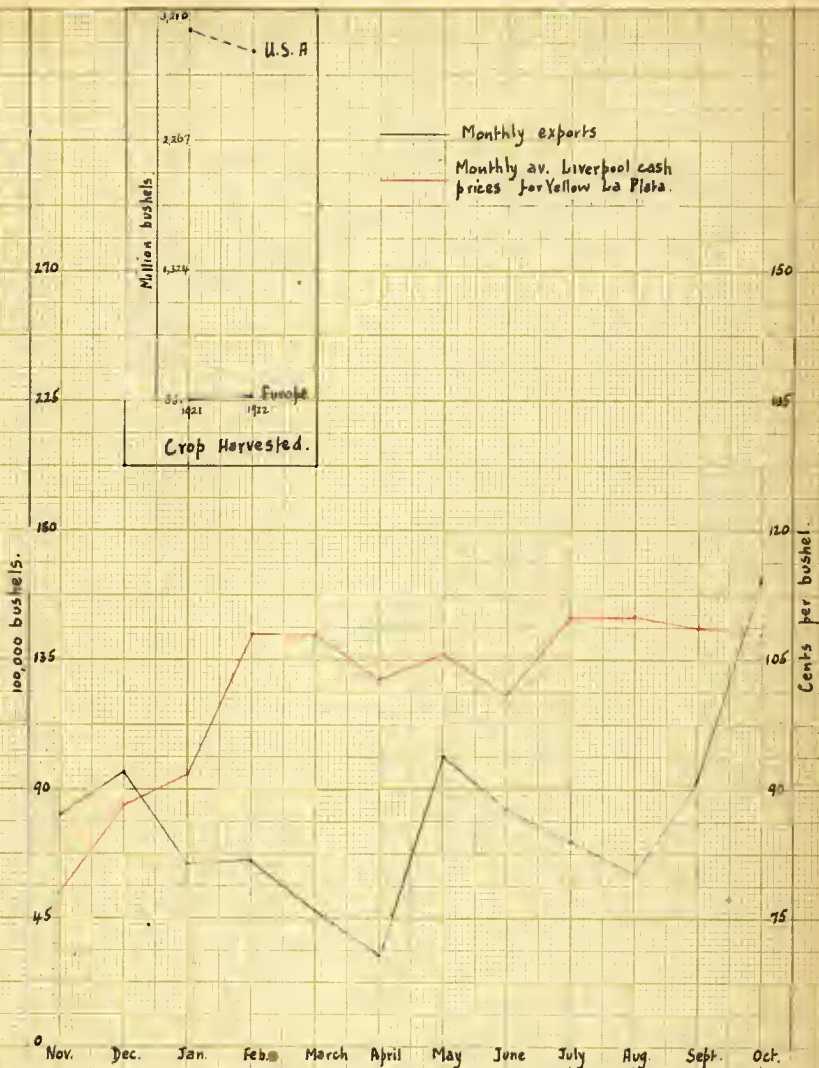


Fig. 19. Argentine Maize Exports & Prices for 1921-22.  
Inset: U.S. A. & Europe (ex. Russia) Production.

(d) Season 1923-24. (see figure 21).

During December to May exports are low and prices are high, but after July, prices rise to higher in September and October in spite of large exports. This is due to the small United States of America crop harvested in 1924 and the small world maize and wheat production of 1924. It is interesting to note that the rise from July to October coincides with a similar extraordinary advance of wheat on the Chicago Board of Trade.<sup>24</sup>

(e) Season 1924-25. (see figure 22).

This is an exceptional year showing a fall in prices from January to April and a definite break in March and April when exports are at their lowest.

The explanation of the price trend this season is to be found in the heavy speculation on the Chicago Board of Trade during 1924-25 as a result of which wheat made an extraordinary advance from July 1924 to January 1925, and after March 2 the market collapsed utterly to a low point in April.<sup>24</sup>

The rise in Liverpool maize prices from November to January, which continues the trend from July of the previous season, with the extraordinary break in March

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24. U.S.A. Senate Document No. 135. - "Fluctuations in Wheat Futures", pp. 1 and 17.

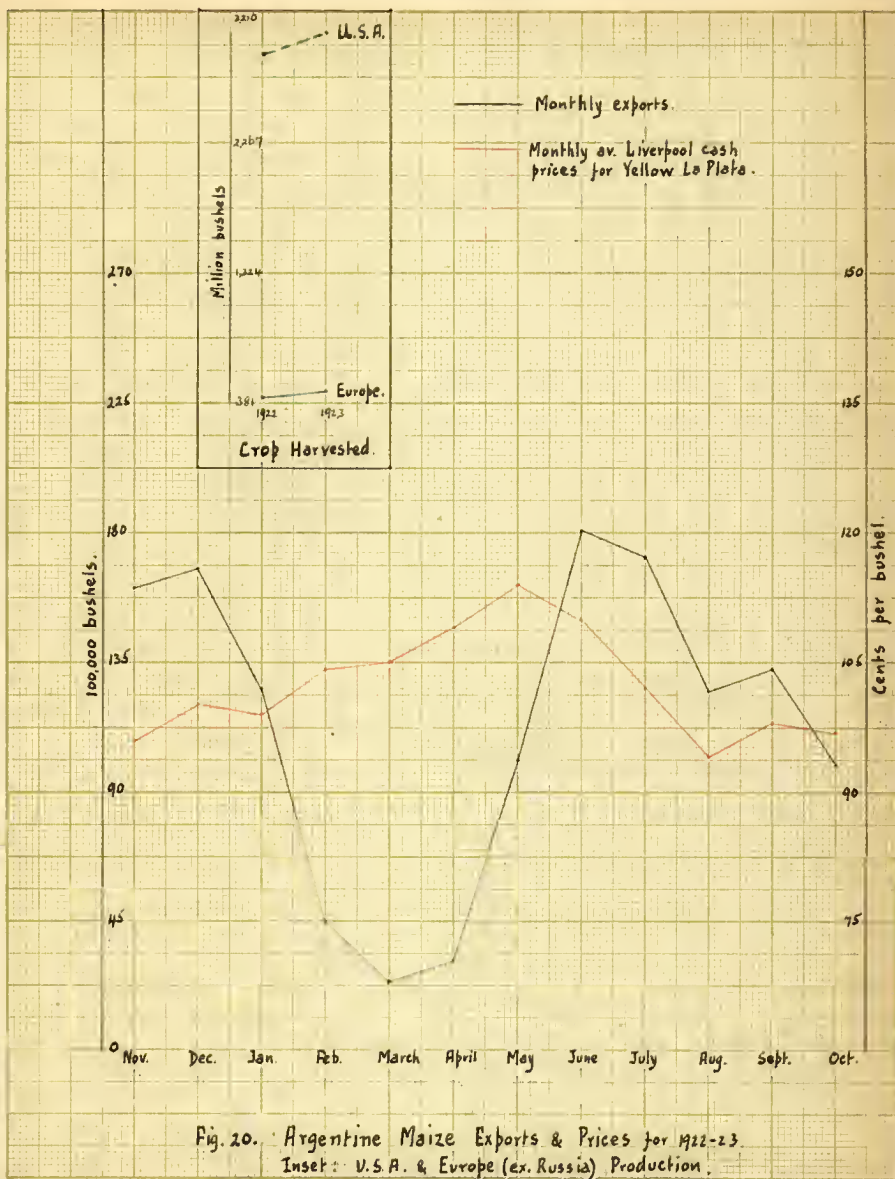


Fig. 20. Argentine Maize Exports & Prices for 1922-23.  
Inset: U.S.A. & Europe (ex. Russia) Production.

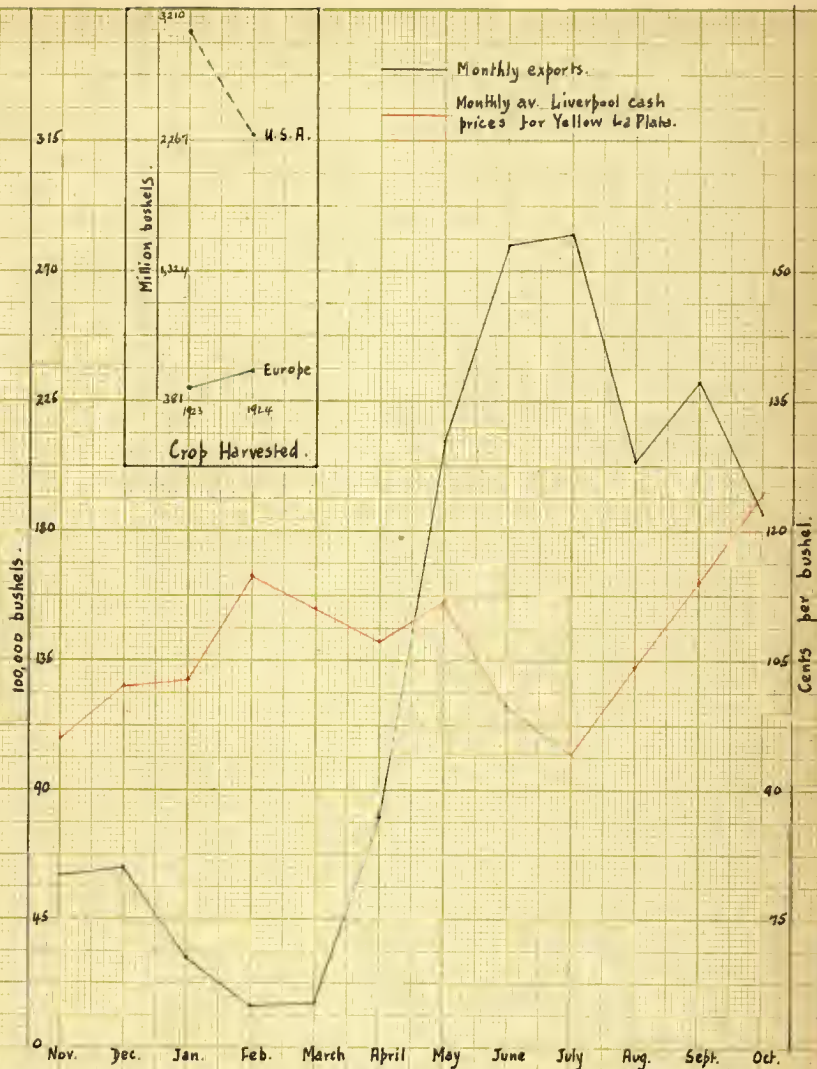
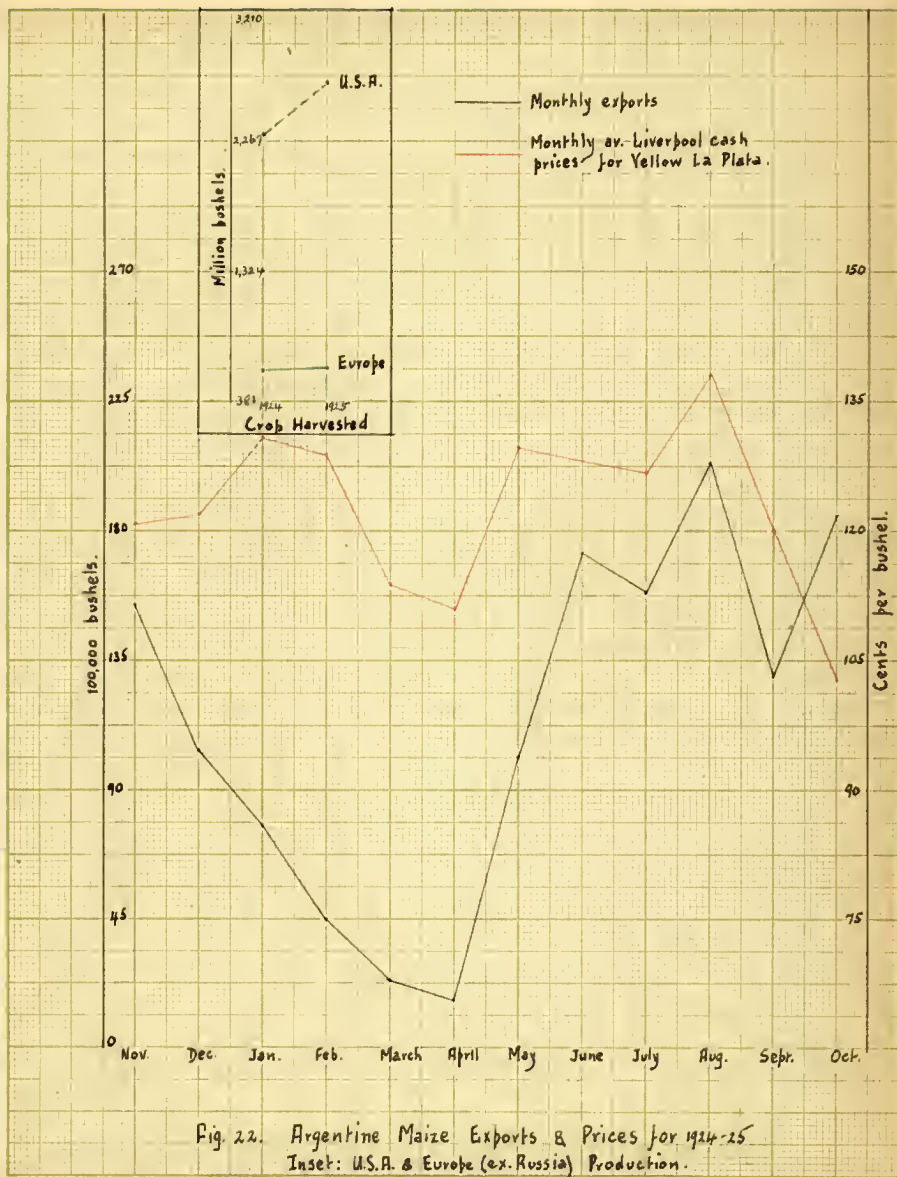


Fig. 21. Argentine Maize Exports & Prices for 1923-24.  
Inset: U.S.A. & Europe (ex Russia) Production.





and April, thus follow the Chicago wheat trend very closely.

Due to the small Argentine maize harvest and exports in 1925, prices are high from May to August, but after August the large United States of America crop of 1925 has a depressing influence.

(f) Season 1925-26. (see figure 23).

During November to May exports are low but prices are also low and the big 1926 Argentine crop and exports together with a record Roumanian production in 1926, keep prices low although there is a rise in July and August with a corresponding fall in exports.

The break in prices after December 1925 is again explained by abnormal speculation on the Chicago Board of Trade which caused a sharp rise in wheat prices from October to December 1925 and a subsequent fall in prices in 1926.<sup>25</sup> The Liverpool maize market prices again follow this trend closely, as in the previous season.

(g) Season 1926-27. (see figure 24).

The exports for this entire season are exceptionally high and the prices remain correspondingly low. The two large Argentine crops in 1926 and 1927 account for these heavy exports and the low prices.

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25. U.S.D.A. - "Speculative Transactions in the 1926 Wheat Future", page 7.

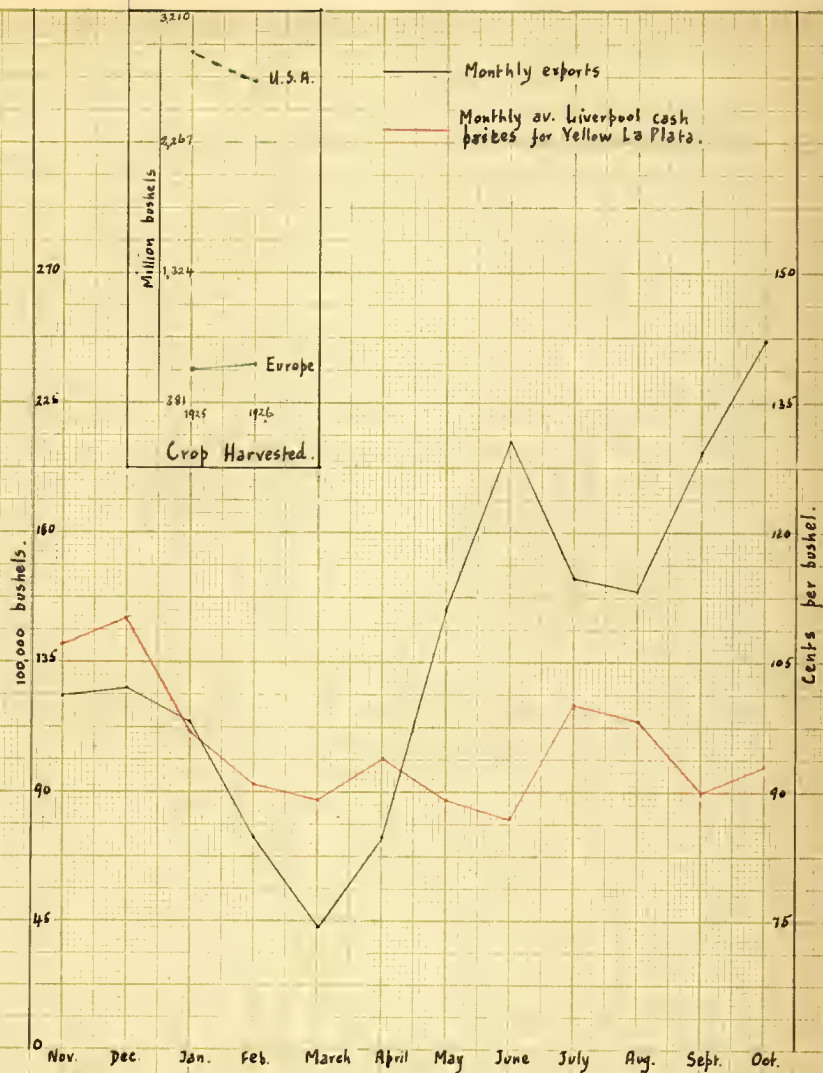


Fig. 23. Argentine Maize Exports & Prices for 1925-26.  
Inset: U.S.A. & Europe (ex. Russia) Production.

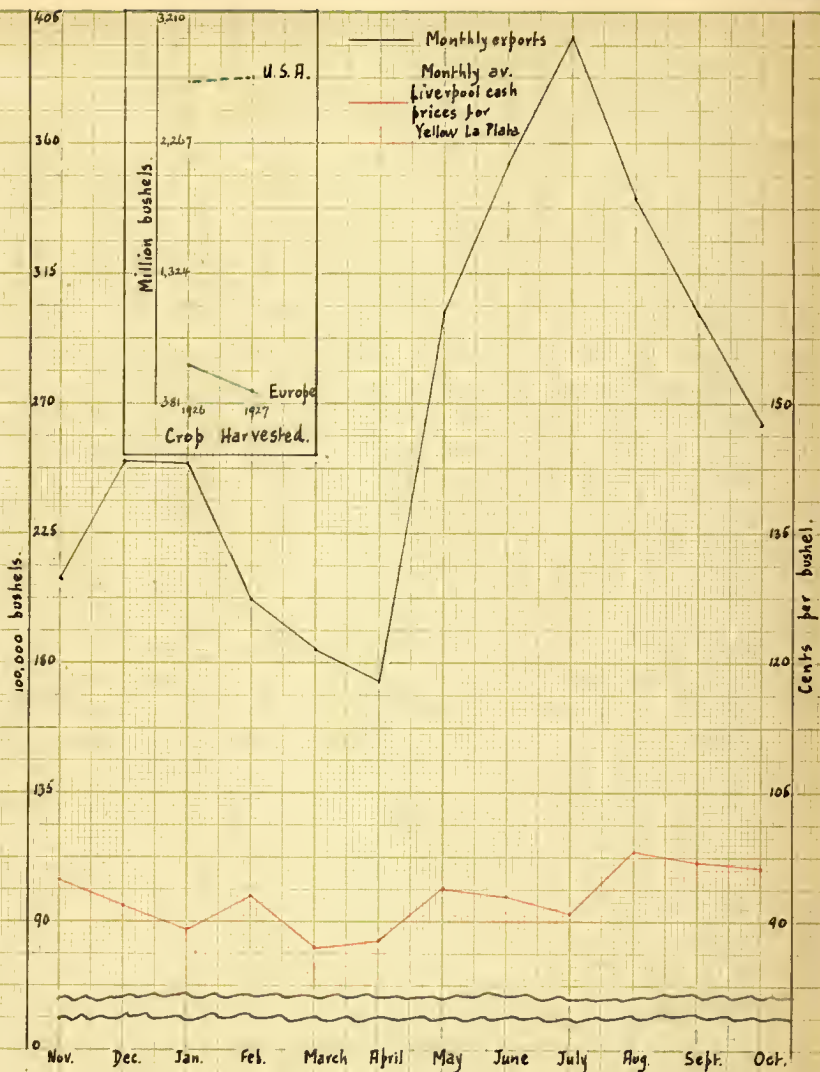


Fig. 24. Argentine Maize Exports & Prices for 1926-27  
Inset: U.S.A. & Europe (ex. Russia) Production.



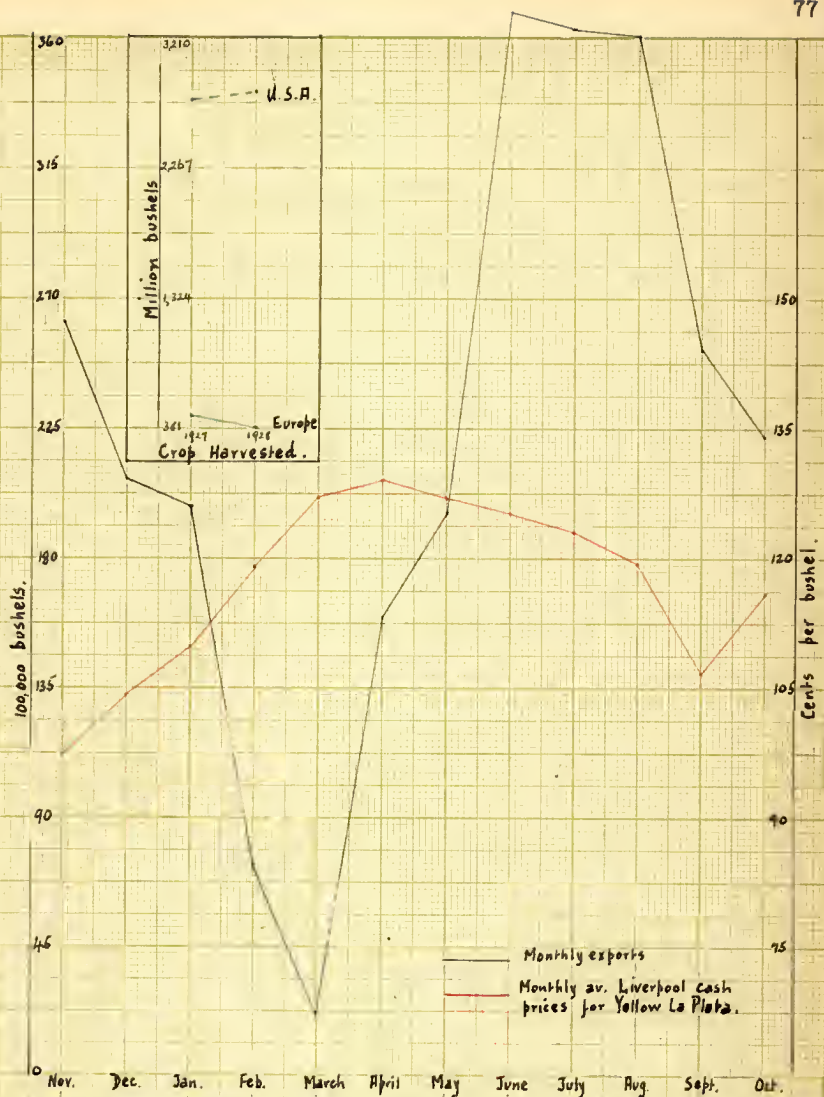


Fig. 25. Argentine Maize Exports & Prices for 1927-28.  
Inset: U.S.A. & Europe (ex. Russia) Production.

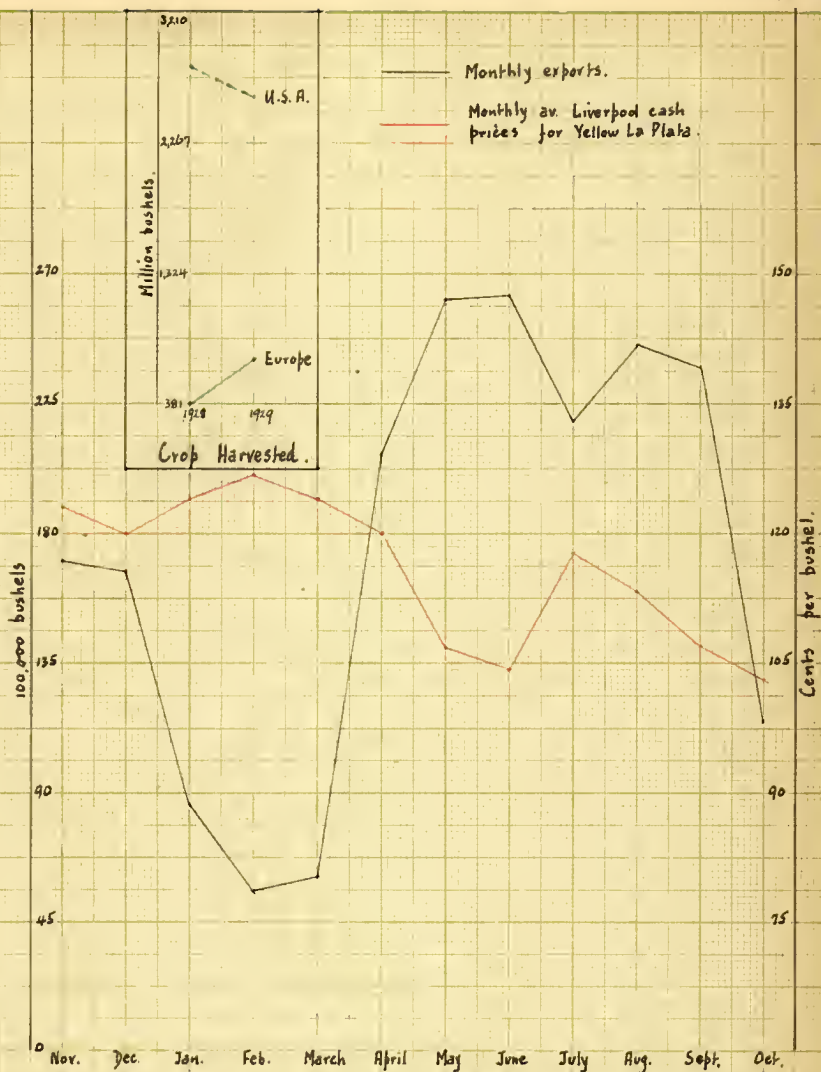


Fig. 26. Argentine Maize Exports & Prices for 1928-29.  
Inset: U.S.A. & Europe (ex. Russia) Production.

(h) Season 1927-28. (see figure 25).

From December to May exports are low and prices are high and subsequently decline due to the exports of the large 1928 crop. The price rise from November to March is big due to the exceptionally low price level of the preceding season. The relative maintenance of the high prices in spite of the very heavy Argentine exports, is possibly due to the very small European production in 1928.

(i) Season 1928-29. (see figure 26).

During November to April exports are low and prices are high, and during May to September exports are big and prices are low, but with a break in exports in July there is a corresponding rise in price. The price trend after April is down due to the large world crop of 1929 and especially large European production.

(j) Price rise from Autumn to Spring (of the northern hemisphere).

Comparing figures 18 and 19, it is seen that prices after May 1921 fall low and subsequently the rise from the Autumn to February 1922 is big, namely, thirty-three cents.

Figures 19 and 20 show prices after May 1922 remain high, and subsequently the price peak in the spring of 1923 comes late in May and the final autumn-spring rise is

only three cents.

Prices fall after May 1923 (figure 20) and the price rise to February 1924 (figure 21) is again big, namely, about twenty-six cents.

Prices fluctuate abnormally during 1924-25 and 1925-26 (figures 22 and 23) because of unusual speculative activities, while prices in 1926-27 (figure 24) remain low because of the unusually heavy exports.

The price rise from the autumn of 1927 to the spring of 1928 is big, namely, thirty-one cents (see figures 24 and 25), since prices are low during May to October 1927.

Prices decline after May 1928 and subsequently the rise to February 1929 is big again, namely, nineteen cents.

Hence normally a low price period during May to October, is followed by a rise to the following spring, but when prices remain high during the autumn, the prices are not likely to rise appreciably to the next spring.

#### Exports and Prices by Types of Crop Seasons.

- (a) Small crop followed by small crop. (see figure 27).

While it must be borne in mind that here three seasons are included for which the general price level



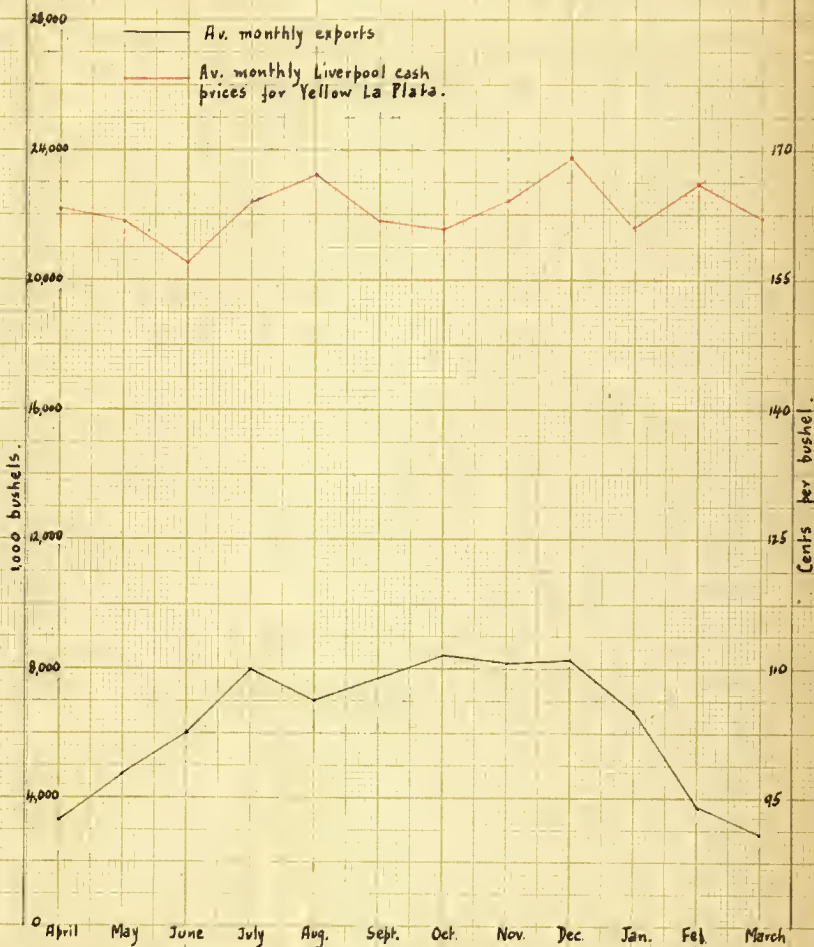


Fig. 27. Argentine Maize Exports & Prices.

Av. monthly exports & prices for the 5 years 1916-17, 1917-18, 1918-19, 1921-22, & 1922-23 when a small crop was followed by a small crop.

is high, nevertheless, it is clear that the average price level for these five seasons, where a small crop is followed by a small one, is high because of the small exports.

Due to the small exports from the small crop, prices are high from April to September, and from October to March prices are fairly well sustained and the peak of the season reached in December, due to the influence of the following small crop.

(b) Small crop followed by large crop. (see figure 28).

Bearing in mind the general price level during these individual seasons, it is seen that the average price level for these four seasons, when a small crop is followed by a large one, is still higher than in the case of large crops.

In contrast with the case studied above (small-small), here the trend of prices is decidedly down through the season.

From April to September prices are high, the peak being in May, due to the small exports, but decline gradually after May as exports increase after April. From October to March prices are low although exports are low and decreasing, because of the influence of the coming large crop. Prices do not commence to rise until February and March when exports are normally at their lowest.

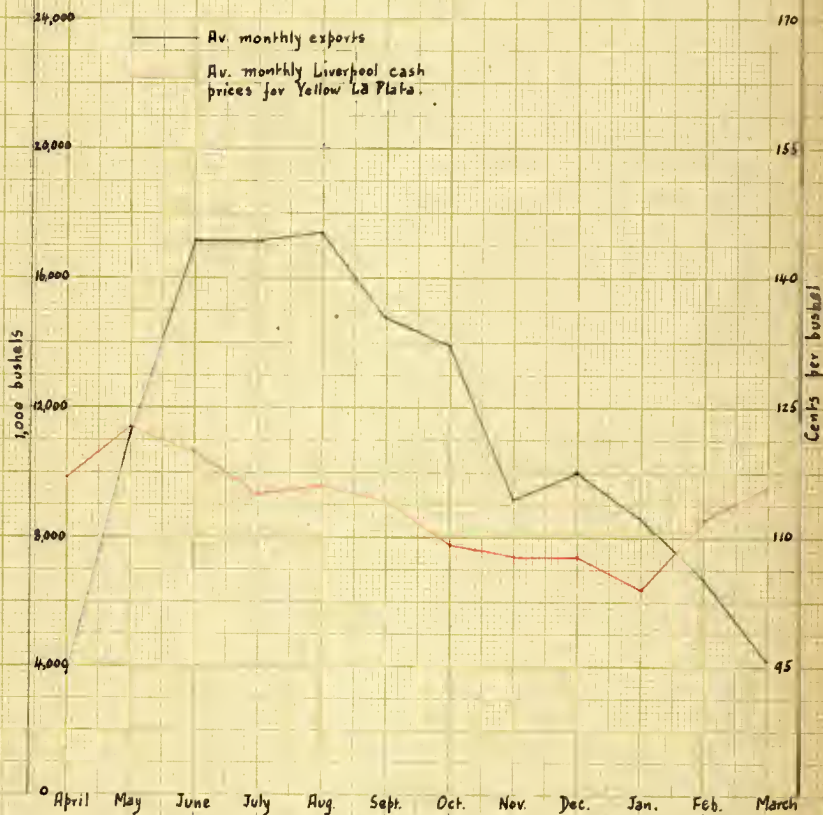


Fig. 28 Argentine Maize Exports & Prices

Av. monthly exports & prices for the 4 years 1913-14, 1919-20, 1923-24 & 1925-26 when a small crop was followed by a large crop.

- (c) Large crop followed by small crop. (see figure 29).

Bearing in mind that for the four years studied for a small crop followed by a large one there are included two low price seasons, and that in this case of a large crop followed by a small one there is only one season out of the three which has a low price level, the fact is explained why the average level of prices in this case of large crops and exports is not lower than in the former case. The average prices are, however, considerably lower than in the first case of a small crop followed by a small one.

Due to the large exports, prices are low during June to November. From April to September prices fall as exports increase, but from September to March prices increase as exports fall. The price rise starts when exports are still high due to the influence of the coming small crop.

- (d). Large crop followed by large crop. (see figure 30).

While the inclusion of three low price seasons out of four, necessarily makes the average price level for these four seasons when a large crop is followed by a large one, unduly low, yet it seems that the average





Fig. 29. Argentine Maize Exports & Prices.

Av. monthly exports & prices for the 3 years 1915-16, 1920-21, 1924-25 when a large crop was followed by a small crop.



Fig 30. Argentine Maize Exports & Prices.

Av. monthly exports & prices for the 4 years 1914-15, 1926-27, 1927-28 & 1928-29 when a large crop was followed by a large crop.

price level is low also because of the large exports.

The large exports keep prices low from April to September, and the succeeding big crop keeps the subsequent prices also low, so that the prices start rising as late as December-January when exports are decreasing fast to a low point.

#### Liverpool Prices of South African and Argentine Maize<sup>26</sup>

General Price Trend. (see figure 31). For the six years 1925 to 1930 the Liverpool average cash prices for Argentine and South African correlate very closely.

The South African white dent maize is always at a premium over the Argentine yellow flint of from three to eight pence for 100 pounds, or an average of five pence, but in general the price trends are remarkably similar.

In view of the dominant position of the Argentine exports, and the preceding study of Argentine exports and prices, it seems that the Argentine supply determines price to a large extent and that the South African maize prices follow the Argentine price trend at Liverpool.

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26. Note: Unfortunately no comparable record of prices at Liverpool for U.S.A. and Continental maize could be compiled from "Broomhall's Corn Trade News" because of the total lack of quotations in many cases.

Average Exports and Prices. (see figure 32). A study of the three seasons 1927-28 to 1929-30, for which comparable data are available, shows the average South African maize prices again conforming to that of the Argentine average trend.

Comparing figure 32 with figure 17, the similarity is obvious:

1. A general downward trend in prices characteristic of the post-war years.

2. A low Argentine export period during the spring months of the northern hemisphere, coinciding with a high price period.

3. A subsequent low price period, although July and August rise a little, when the Argentine exports are high.

The average situation does not show any influence of the South African export movement to the United Kingdom on maize prices, and so the individual seasons remain to be investigated separately.



27  
**Table XXVII. Liverpool Average Monthly Cash Prices  
 for No.2 White Flat African Maize  
 (shillings and pence per 100 lbs.)**

Month	1925	1926	1927	1928	1929	1930	Average
Jan.	10/6	7/	8/	8/3	9/1	6/11	8/3.5
Feb.	10/4	7/	8/3	8/8	9/3	6/10	8/5
March	8/7.2	6/8	8/2	9/	9/3	6/8	8/1
April	9/1	6/11	8/	9/6	9/2	6/11	8/3
May	9/6	6/8	7/9	9/6	8/5	6/8	8/1
June	9/5	6/9	8/	9/5	8/3	6/5	8/0.5
July	9/3	7/7	8/2	9/7	9/	6/3	8/4
Aug.	10/1	8/	8/7	9/8	9/	6/9	8/8
Sept.	9/	7/7	7/11	8/9	8/4	6/2	7/11.5
Oct.	7/11	7/6	7/9	8/7	8/	4/8	7/5
Nov.	7/7	7/9	7/10	9/	7/6	4/2	7/4
Dec.	7/11	7/7	8/3	8/11	7/3	4/8	7/5

27. Tables XXVII and XXVIII were compiled from quotations in "Broomhall's Corn Trade News." The monthly average price was taken to be represented by four weekly cash prices each month. Although not accurate, it is believed that these prices give a very fair indication of price trends.

Table XXVIII. Liverpool Average Monthly Cash Prices  
for Yellow LaPlata Maize  
(shillings and pence per 100 lbs.)

Month	1925	1926	1927	1928	1929	1930	Average
Jan.	9/9	7/1	6/7	8/1	9/1	6/2	7/9.5
Feb.	9/7	6/8	6/10	8/9	9/4	5/9	7/10
March	8/6	6/6	6/4	9/4	9/1	5/6	7/6.5
April	8/4	6/11	6/6	9/5	8/11	6/8	7/9.5
May	9/8	6/8	6/11	9/4	8/1	6/3	7/10
June	9/5	6/6	6/10	9/2	7/8	5/7	7/6
July	9/3	7/4	6/8	9/7	8/7	6/2	7/11
Aug.	10/1	7/2	7/2	8/10	8/4	6/7	8/
Sept.	8/10	6/7	7/1	7/10	7/10	5/8	7/4
Oct.	7/7	6/10	7/	8/5	7/6	4/7	7/
Nov.	7/10	7/	7/1	9/	7/	3/10	6/11.5
Dec.	8/	6/9	7/8	8/10	6/7	3/9	6/11

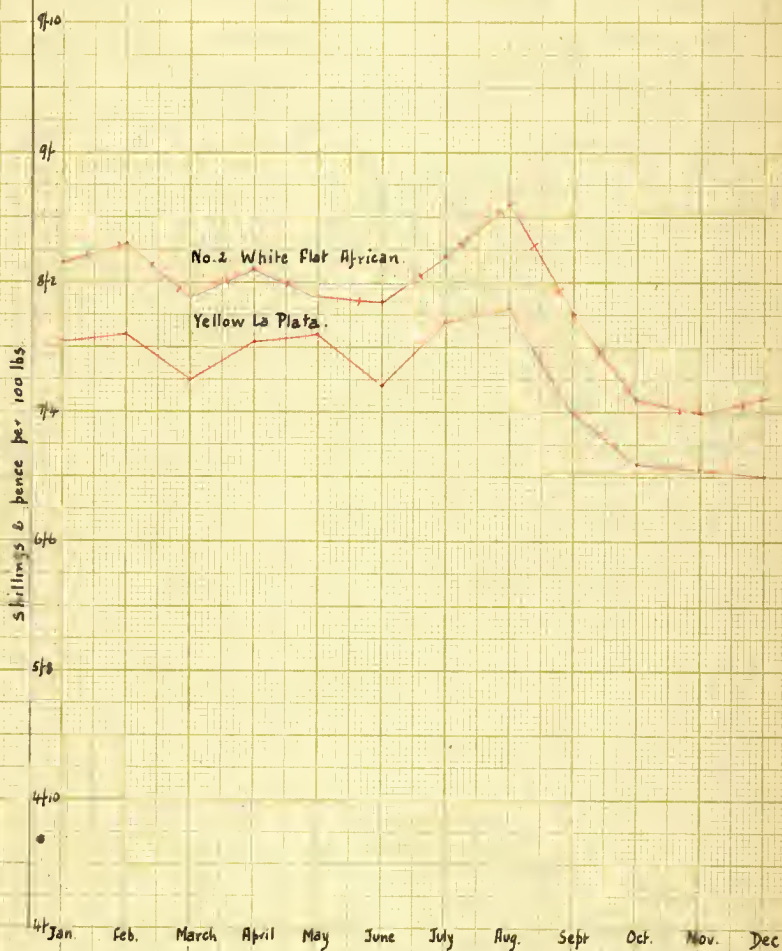


Fig. 31. South African & Argentine Maize Prices.

Av. monthly Liverpool cash prices for 6 years 1925 to 1930.

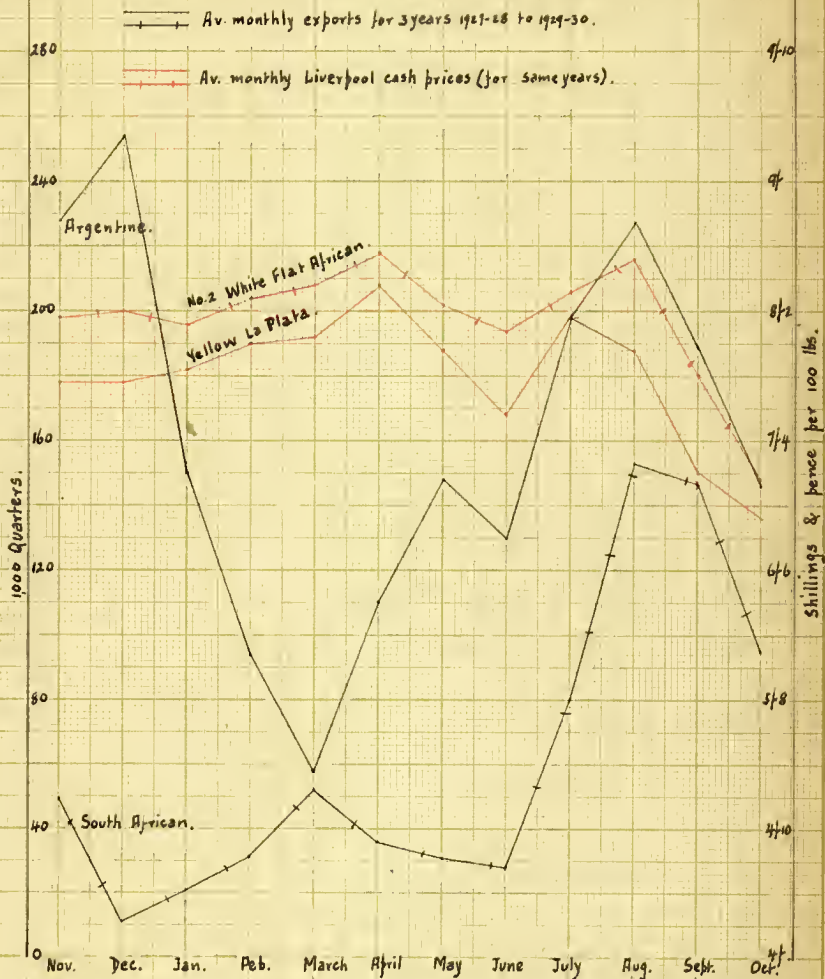


Fig. 32. South African & Argentine Maize Exports to the United Kingdom & Prices at Liverpool.



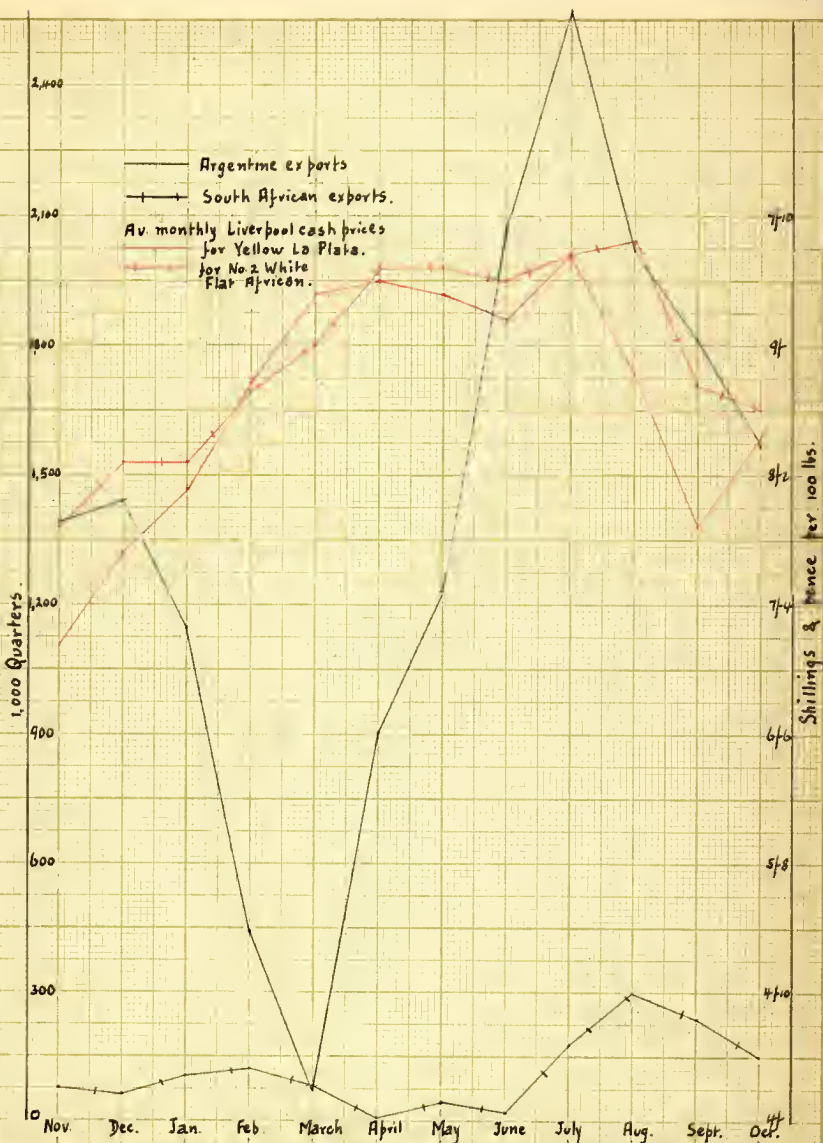


Fig. 33. Argentine & South African Maize Exports to the U.K. & "Orders" & Liverpool Prices 1927-28.

### Exports and Prices by Seasons.

#### (a) Season 1927-28. (see figure 33).

The Argentine exports to the United Kingdom and "Orders" are low and prices rise during December to May, and subsequently prices fall due to the heavy exports from the large 1928 crop. The price rise from November is big due to the low price level of the preceding season. (see figure 25).

As shown before (see figure 13), the South African export movement is approximately similar to that from Argentine except for the second heavy movement from South Africa at the end of its summer.

The South African maize prices move roughly with the Argentine prices, except during the latter part of the season when the South African maize prices are relatively stronger, probably because of the exceptionally small Roumanian and European production in 1928 causing a relatively strong demand for the South African maize.

#### (b) Season 1928-29. (see figure 34).

The Argentine and South African prices move together, but as in the above case the South African prices are at a higher spread in the latter part of the season.

As before (see figure 26), prices are high from November to April when the Argentine exports are decreasing, and subsequently prices fall (except for a temporary rise in

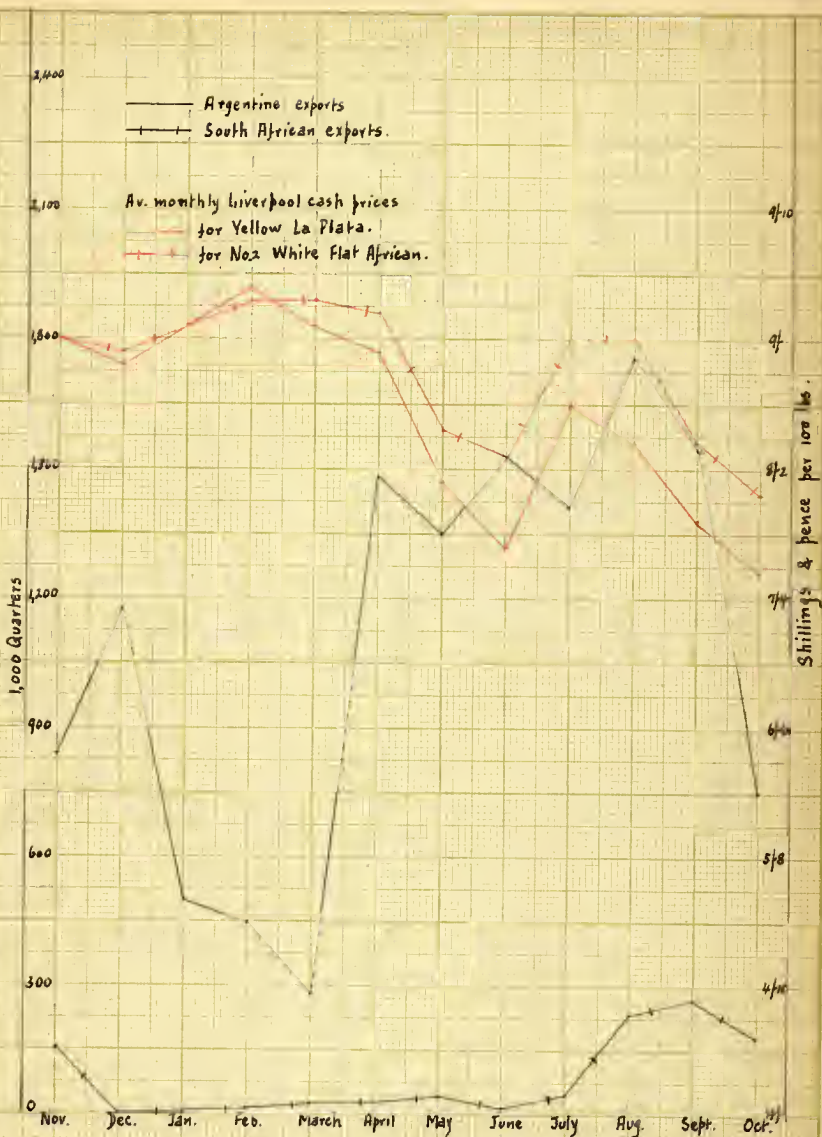


Fig. 34. Argentine & South African Maize Exports to the U.K. & "Orders" & Liverpool Prices 1928-29.

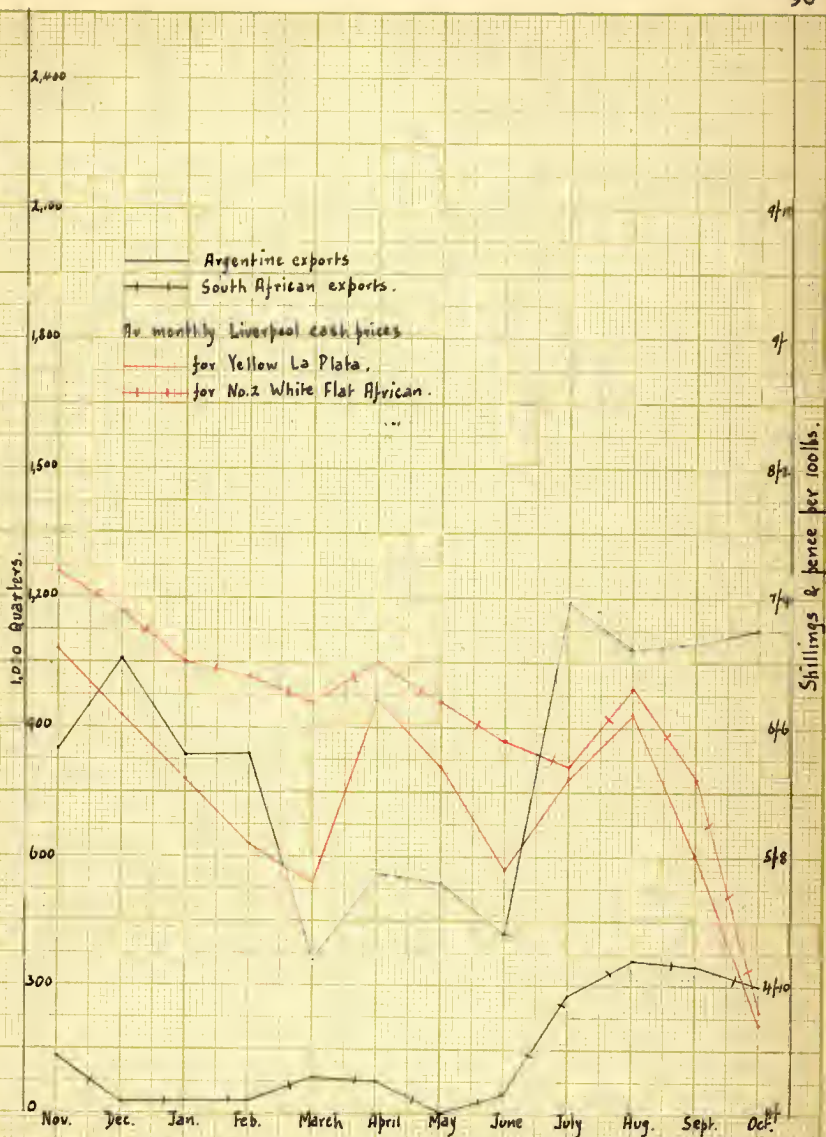


Fig. 35. Argentine & South African Maize Exports to the U.K. & Orders & Liverpool Prices 1929-30.

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Fig. 36. South African Maize Exports & Prices 1925-26.

July and August for somewhat lower exports), due primarily to the large world and especially large European crop of 1929.

(c) Season 1929-30. (see figure 35).

The price movement during this season is sharply downward, except for temporary rises in April and in August.

The Liverpool prices thus reflect the general business conditions after October 1929, and the April rise is the normal spring rise for low Argentine exports, while the August price rise is to be accounted for by the very small United States of America 1930 production.

#### South African Exports and Liverpool Prices

The investigation thus far shows the price determining character of the Argentine production and exports, and it now remains to consider the South African production and exports in relation to prices.

#### Exports and Prices by Seasons.

(a) Season 1925-26. (see figure 36).

Prices are high during July to September (1925) in spite of the record big South African crop and exports of 1925. Again, prices are low from January to June when the South African exports are low and in spite of the

following very small crop. Thus the South African exports and production in this season do not seem to have any influence on prices, and an explanation must be sought for elsewhere.

Comparing figure 36 with figures 22 and 23, the similarity of movement between the Argentine and South African maize prices is again apparent, namely: a peak price in August 1925, due to the small Argentine crop of 1925; a subsequent sharp fall to June 1926, due to the depressing influence of the large United States of America 1925 crop after August and the large Argentine production and exports in 1926 keeping prices low after January; and, the temporary price rise in December, due to the normal tendency for prices to go up from November or December when the Argentine exports are decreasing rapidly.

(b) Season 1926-27. (see figure 37).

The seasonal price trend shows again, like Argentine prices (figures 23 and 24), a rise in August and a rise in February, but the South African maize price movement is more distinct, due possibly to the large Argentine crops and exports of 1926 and 1927 and the abnormally small South African crop in 1926 with very low exports over this season.

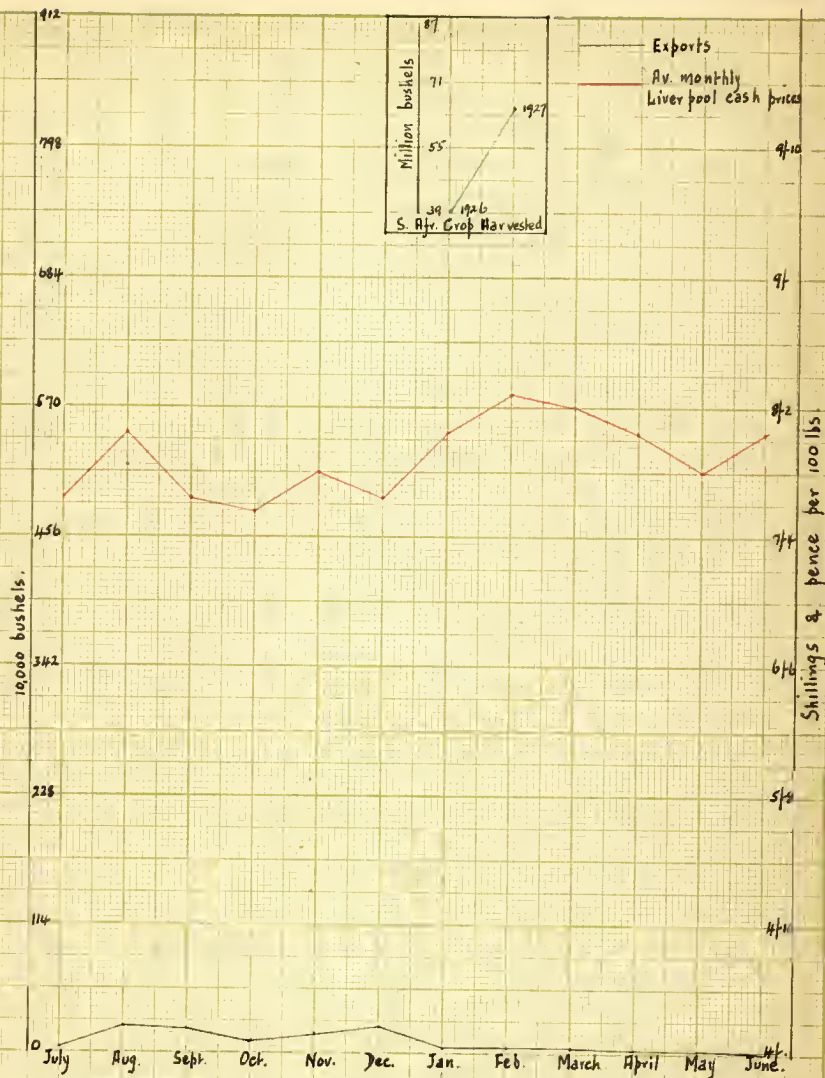


Fig. 37. South African Maize Exports & Prices 1926-27.



(c) Season 1927-28. (see figure 38).

The low prices during September to November coincide with the heavy export movement, but this can be explained by the exceptionally large 1927 Argentine harvest and exports together with a large world production, keeping prices low during the latter part of 1927.

The large 1928 South African production pushing out a second heavy export at the end of the South African summer, does not result in lowering prices, but instead prices rise from October 1927 to April 1928 (compare figure 25) due to the low Argentine exports at the end of its export season.

(d) Season 1928-29. (see figure 39)

The price rise from October to March coincides with the fall in exports, and the subsequent price decline coincides with the second export movement in expectation of a large crop in 1929.

But the facts are well explained by the Argentine production and exports, and the world and European crops. (see figures 24 and 25). The relatively high price of July and August is due to the very small 1928 European crop; the price rise from September-October to February is due to the normal falling off in Argentine exports; and the subsequent price fall can be accounted for by the heavy Argentine exports from April onwards and the large European and world production in 1929.

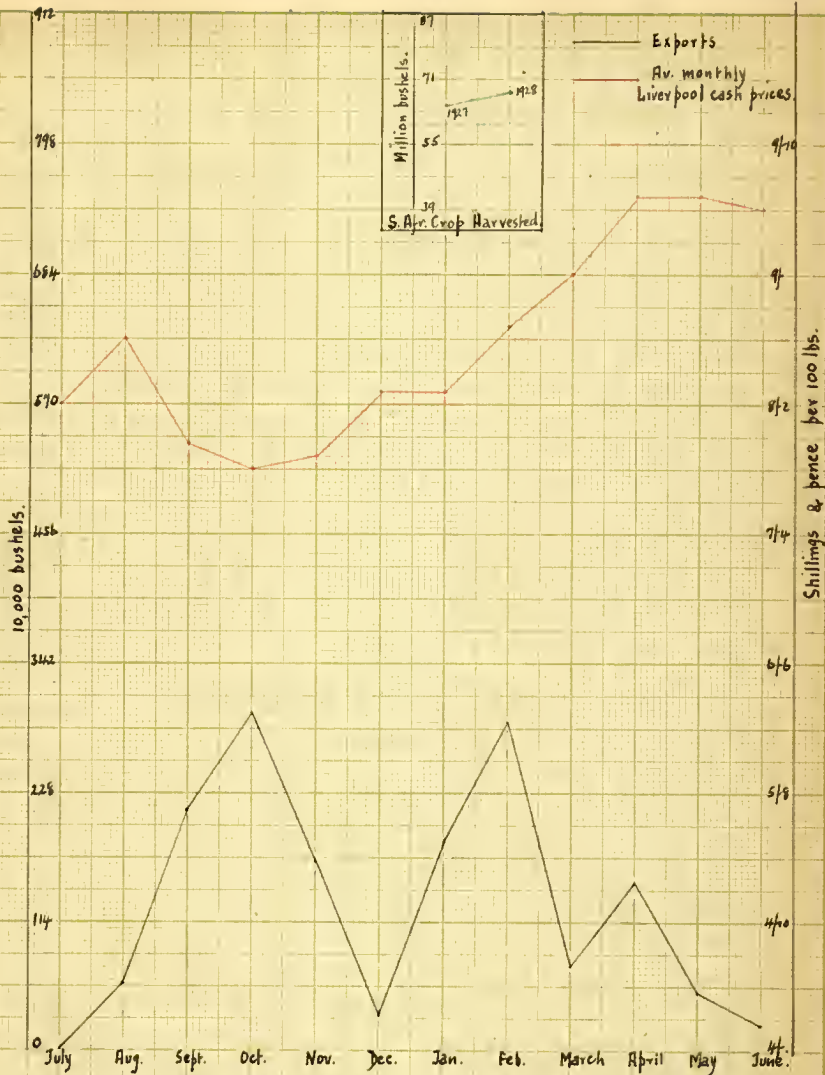


Fig. 38. South African Maize Exports & Prices. 1927-28.

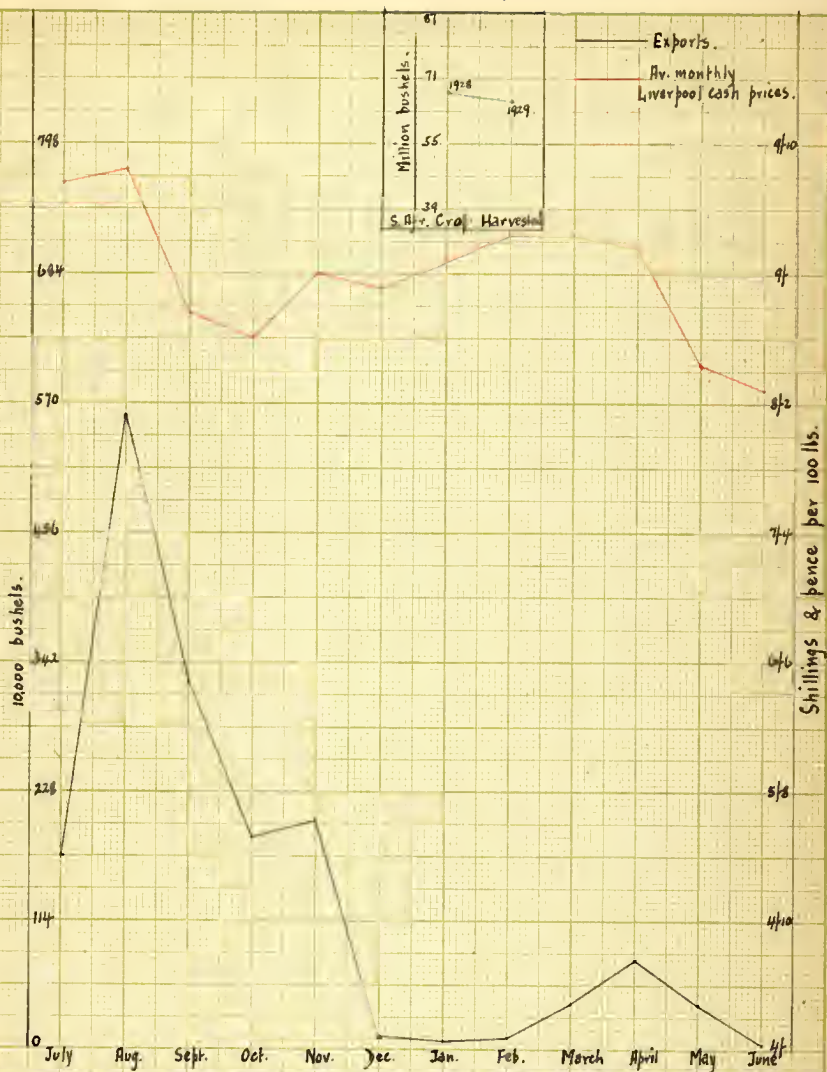


Fig. 39. South African Maize Exports & Prices 1928-29.

## SUMMARY AND CONCLUSIONS

### The General Movement

Argentine. The pre-war heavy export period comes during June to October, with the peak in October. Light exports take place from February to May with the low point in March.

In post-war years the heaviest exports take place from May to October, with the peak in June-July. Light exports come during February to April with the low point in March.

United States of America. In pre-war years heavy exports fall during February to April, with the peak in March. Light exports come from July to November with the low point in November.

The post-war heavy exports take place in the period January to April, the peak being reached in February-March. The low exports take place in October and November.

Roumania. In pre-war years the heavy exports take place during March to August, with the peak movement in May, but there is also a first movement in November-December before the winter sets in. Light exports fall in January and February and again in September-October.

In post-war years there are two heavy export periods, namely, in November-December and again in March to July,



with peaks in December and April. Small exports take place during August to October and in January-February, with the low point in October.

South Africa. In pre-war years exports move from September to April, and the lightest period is during May to July.

In post-war years heavy exports take place during August to November with the peak in September. The light exporting period is May to July with the low point in June.

The Argentine exports dominate all other exports. The United States of America exports are important, in pre-war years during March, and in post-war years in February-March. The Roumanian exports in pre-war years are relatively important in May, but now take a less important position during December and April. While the South African exports are insignificant in pre-war years, in post-war years they take a relatively more important position especially during August to October.

#### The Export Movement According to Destination

The Argentine ships most of its exports to "Orders", to the Continent, and smaller amounts to the United Kingdom and Non-European countries.

The United States of America ships chiefly to the Con-

tinents, then to the United Kingdom and "Orders", and to Non-Europe.

European export countries ship most of their maize to the Continent, less to "Orders" and small amounts to the United Kingdom.

South Africa exports to the Continent, the United Kingdom, "Orders", and to Non-Europe in the order named.

The Argentine is far in the lead in shipping to the United Kingdom and "Orders." South Africa comes next in importance as a supplier of the United Kingdom markets, shipping heavily during August and September, but also in March the South African maize is important on the United Kingdom markets when the total exports are small. Europe contributes to this type of shipment in June, and the United States of America is a weak supplier of the United Kingdom and "Orders."

Argentine is also the heaviest exporter to Continental markets, with the European exporters competing in May-June, and the United States of America and South Africa less important.

To Non-European countries, the Argentine is the heaviest exporter, the United States of America is a relatively heavy and uniform exporter, and South Africa a small exporter.

### Argentine Exports and Liverpool Prices

Normally, there is a high price period during December-January-February to April-May when Argentine exports are light.

After April-May, prices generally fall with the increased exports from Argentine.

All other factors being equal, the rise in price during the spring months of the northern hemisphere, depends on the lightness of the Argentine exports in this period, and the fall in prices during April to September depends on the heaviness of the Argentine exports.

But prices may be influenced by external factors. During April to September, prices may be unduly stimulated or suppressed by the size of the coming United States of America, European or World crops.

Liverpool prices also reflect general business conditions. Thus, in pre-war years, the general trend is rising, while since then it is downward. Further, extraordinary speculative activity, as on the Chicago Board of Trade, disturbs the normal price trend.

Besides these external disturbing factors, the influence of the size of the Argentine production and exports is clearly established, as is also seen in a study of prices by types of Argentine crop seasons.

### Liverpool Prices of South African and Argentine Maize

On the average, the South African white dent maize prices are at a premium above the yellow LaPlata but follow the Argentine maize price trend very closely.

Although South Africa exports relatively heavy to the United Kingdom, yet the Argentine exportations are so much bigger that the latter determine prices.

### South African Exports and Liverpool Prices

There seems to be no relation between Liverpool prices and the size of the South African production and exports. The price movements are determined by the Argentine production and exports, and influenced by production in the United States of America and Europe, and by general business activities.

### Conclusions

The period of low Argentine exports extends from December to May. This is one factor that aids the seasonal advance of Liverpool maize prices from January to April.

Heavier Argentine exports after May in the post-war years is a factor in recent years working against June to November price advances on the Liverpool market. This in-



fluence adds to the influence of the general tendency of all prices to work to lower levels since 1920.

The seasonal trend of Liverpool maize prices is affected materially by the sequence of Argentine crops of different sizes. Thus a small Argentine crop followed by a small crop shows a distinct seasonal tendency in exports, a distinct seasonal trend in Liverpool maize prices. Likewise a small crop followed by a large crop, or a large followed by a small, or a large followed by a large, have distinct effects on export and price trends.

Exporters in the northern hemisphere, besides considering their own production and general economic conditions, after the harvest, will have to judge the probability for a higher price after the spring, largely by crop reports on the growing Argentine crop. Normally, the United States of America and the European exporters are fortunate in exporting heavily during the high price period.

At the commencement of the South African export season (June-July), Liverpool prices are normally on a downward trend. The probable price trend during June to November will have to be judged largely by the size of the Argentine exports from the harvest of the preceding March, together with the outlook for the coming United States of America and European harvests. If prices in this period are falling low,

the chances are strong that there will be an appreciable rise after the European winter.

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